DVORAK'S MAILBAG: WHAT DO WOMEN WANT?

FREE

California's Computer Magazine

AUG. 1988 • 46

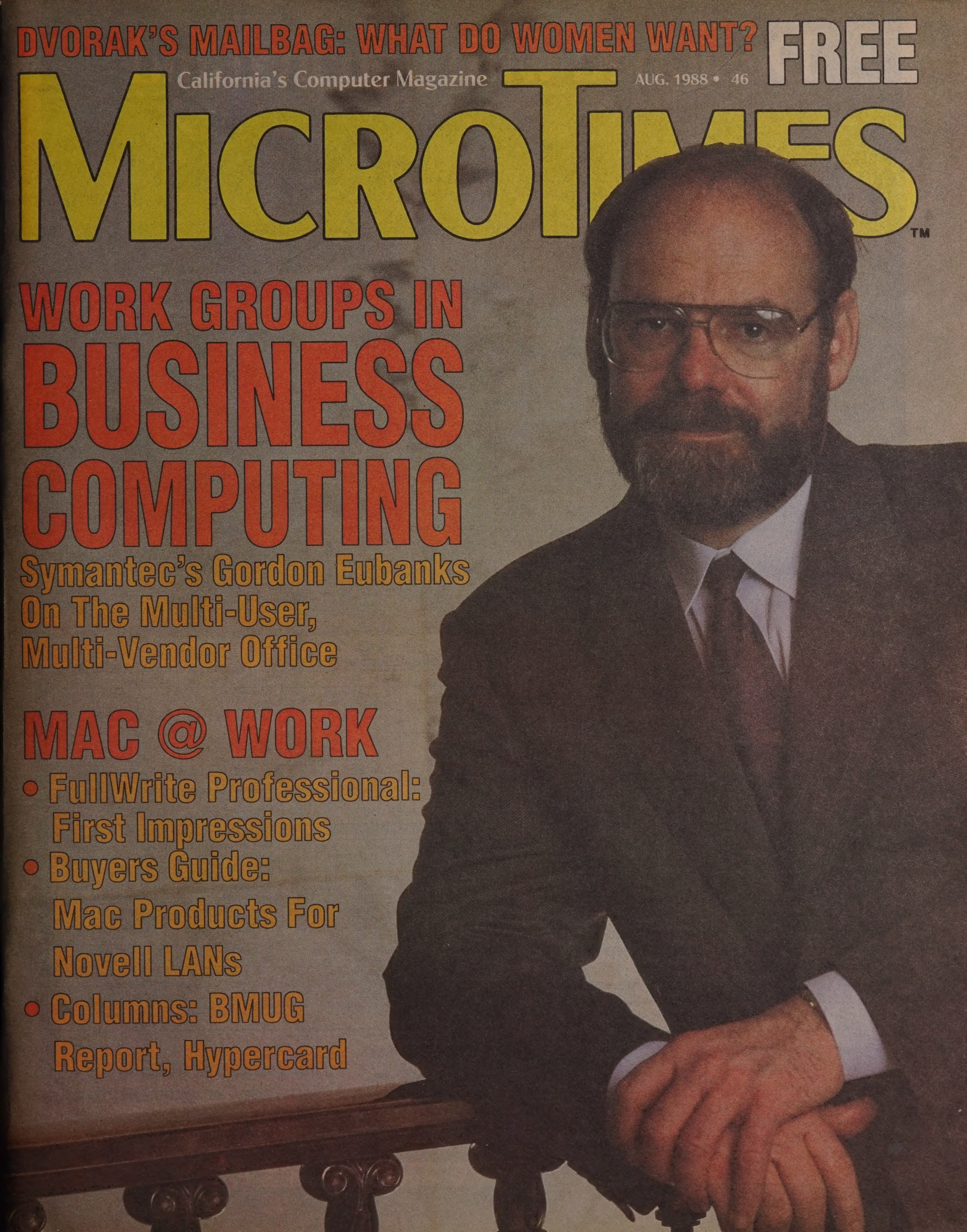
MICROTIMES™

WORK GROUPS IN BUSINESS COMPUTING

Symantec's Gordon Eubanks On The Multi-User, Multi-Vendor Office

MAC @ WORK

- FullWrite Professional: First Impressions
- Buyers Guide: Mac Products For Novell LANs
- Columns: BMUG Report, Hypercard



Designed with you in mind

If you were to design the ideal computer system, it would be designed with your convenience, your needs and budget in mind. The style would be the same taste you have in other electronic components such as stereos, TV's and VCR's – the high-tech look.

This is the concept of the **Delta Gold** line of computers. The **Delta Gold** family features three systems – The Elite (8088, 10 MHz), Prestige (286, 10 MHz) and the Premier (386, 16 MHz). All three computer are at the peak of speed performance.

The **Delta Gold** Computers include video, serial/parallel, and clock circuitry as a part of the motherboard. They are packaged with monochrome, CGA or EGA monitors making even the minimal configurations fully functioning units.

Also included is an integrated software package for word processing, spreadsheets, database management, DOS 3.2, GW Basic, and a 25 minute instructional video, to better clarify those first time questions. An easy front access quick reference DOS guide and digital clock add the final touches to these unbeatably priced systems. Your mind will be at ease with an 18 month warranty, and a toll-free technical support hot line.

The fact is the Delta Gold Systems are the obvious choice for you.

Specifications of the Standard System

Model	Elite	Prestige	Premier
Microprocessor	• 8-bit Intel 8088 Turbo, 4.77 or 10 MHz	• 16-bit Intel 80286, 6 or 10 MHz	• 32-bit Intel 80386, 16 MHz
Co-processor	• Socket for 8087 match co-processor	• Socket for 80287 math co-processor	• Socket for 80387 math co-processor
Memory	• 512KB standard, socketed RAM (Zero Wait State), expandable to 768KB	• 512KB standard, expandable to 1 MB on motherboard	• 1MB standard on board RAM (Zero Wait States & fully utilized)
Storage Device	• One 5.25" 360K, half-height drive • Optional space for internal 3½" hard disk drive	• 5.25" half-height, 1.2MB drive • Space for 3 half-height storage devices • Optional space for internal 3.5" hard disk drive	• Standard 1.2 MB half-height drive • 40MB hard disk drive • Space for 5 half-height storage devices
Expansion Slots	• 4 expansion slots	• 8 expansion slots	• 8 expansion slots
Video Adapter	• Hercules equivalent, CGA, MGA, plantronics on motherboard	• MGA (Mono/color Hercules equivalent graphics card)	• EGA (enhanced graphics adapter card with Hercules capability)
Clock/Calendar	• Real time clock/calendar with battery back-up on motherboard	• Real time clock/calendar with battery back-up on motherboard	• Real time clock/calendar with battery back-up on motherboard
I/O Connections	• One serial communications port • One parallel port on motherboard	• 2 serial communications ports (RS-232C) • One parallel port	• 2 serial communications ports • One parallel printer port
Clicking Keyboard	• 84 key Selectric-style keyboard	• 101-key AT layout, Selectric-style	• 101 key AT layout, Selectric-style
Display Features	• 12" high resolution monochrome monitor with tilt swivel	• 12" high resolution monochrome monitor with tilt swivel	• 14" EGA color monitor with tilt swivel
Controller Board	• On motherboard	• Western Digital Winchester and floppy disk controller card	• Western Digital Winchester and floppy disk controller card

Distributed exclusively by:

Worldwide Computer Distributors
11511 Tennessee Ave.
West Los Angeles, CA 90064
(213) 479-3931

Best Prices - Excellent Service - Quality Products
Will Meet Or Beat Any Advertised Price!

More Savings For You!

10 MHz 0 Wait State 286 System

* 512K on 1Meg Mother Board
* 6/10 MHz switchable CPU
* 0 or 1 Wait State selectable
* Built-in Clock calendar w/Battery back-up
* 220 Watt Power Supply
* Monographic Printer Card
* 360K/720K/1.2MB Hi-Dens. Floppy Controller
* 1.2MB Fujitsu Floppy Drive
* High Resolution Monochrome Monitor
* AT/XT Keyboard
* 48 hrs. Burn-In

$869

Best Buy on 386's

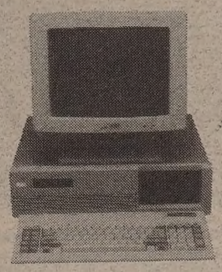
SPECIAL OF THE MONTH

* 1 MB on 386 Motherboard Expandable to 16 MB
* "0" or "1" Wait State Switchable
* Hercules Compatible Monographic Card
* HD/Fl. Controller
* 1.2 MB Floppy Drive
* Hi-res Monochrome Monitor
* 220W Power Supply
* AT Keyboard
* SPECIAL PURCHASE. LIMITED TIME ONLY!

$1998

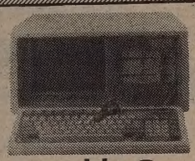
DTK 386-16 System $1549
Same Config as Above
Except with No Memory

16 MHz 286 System



* 512K on 1Meg Mother Board
* 6/12 MHz switchable CPU running equivalent to 16 MHz at 0 Wait State
* Built-in Clock Calendar w/Battery Back-up
* 220 Watt Power Supply
* Monographic Printer Card
* 360K/720K/1.2MB Hi-Dens. Floppy Controller
* 1.2 MB Fujitsu Floppy Drive
* High Resolution Monochrome Monitor
* AT/XT Keyboard
* 48 hrs. Burn-In

$969



Best Portable Computer By All Means

- 8088/80286/80386 Portable Chassis
- 9" Diagonal Frequency Hi-res Monitor
- 84-Key AT-style Keyboard
- Room for 3 half-height drives
- Room for 7 expansion slots
- High Performance 200W Switching Power Supply • Fits Standard AT/XT Motherboard & Interface Card

Seagate Hard Disk

* 20 MB w/XT Controller & Cable.. $269
* 30 MB w/XT Controller & Cable.. $289
* 40 MB ST 251 ..... $369
* 20 MB ST 4026 fast speed $279

Floppy Drives

* Fujitsu/Teac 360K ..... $69 /82
* Fujitsu/Teac 1.2MB $92/102
* Fujitsu 3.5" 720K $110

Monitors

* Samsung Amber w/Tilt & Swivel $69
* Samsung Color RGB $249
* Samsung EGA $349

10 MHz Turbo XT System

* 256K on 640K MB,4.7/10 MHz switchable
* 150 Watt Power Supply
* Monographic Printer Card
* 360K Fujitsu Floppy Drive w/Controller
* High Resolution Monochrome Monitor
* AT Style Keyboard
* 48 hrs. Burn-In

$469

Mother Boards

* 386 8/16 MHz (running at 21 MHz).... $1098
* AT 6/12 0 Wait running at 16 MHz $339
* AT 6/10 0 Wait $255
* AT Baby 6/12 "0" Wait State..... $335
* XT 4/10 MHz $79
* XT 10 MHz w/Disk I/O $129

All Motherboards with 0K

Floppy/Hard Disk Controller

* 2 Dr. Floppy Controller $25
* 2 Dr. AT/XT 360K/720K/1.2MB Fl.Contr. $39
* Hard Disk Contr. for XT $59
* Hard & Floppy Contr. for AT/RLL .. $119/179

Memory Expansion Boards

* **EEMS for XT/AT**, provides up to 2 MB of expanded/extended memory. SW incl. $109
* **EEMS for AT**, provides up to 2 MB of 16-bit expanded or extended memory. Supports DESQview, Framework, Symphony, Lotus 1-2-3, etc. $119
* EMS for AT expandable up to 2.5 MB $75

Logitech Mouse $52

Chassis

* XT Slide-In Case $29
* AT Jr. Case $35
* Super Deluxe Baby AT Case w/200 W Power Supply $110
* AT Case $59

Video Cards

* Herc.Comp. CGA/EGA/MGA Autoswitch $119
* Herc. Comp. CGA/EGA/MGA with PrinterPort $159
* Color/Monographic 2 in 1 Card $79
* Monographic Card w/Printer Port..... $45
* Color Graphic Card w/Printer Port $45

Modems

* 1200 Baud Internal w/software $59
* 1200 Baud External w/software $89
* 2400 Baud Internal w/software $135
* 2400 Baud External w/software $175

Ser./Par./Clock/GameCards

* Serial/Parallel/Game Card for AT/XT $49
* RS232 Serial for XT $25
* RS232 + Clock for XT $39
* Clock/Calendar for XT $29
* Game and Clock for XT $36
* No Slot Clock $29
* Multi I/O for XT (provides SR/PR/Game Port, Fl. Contr., Clock/Cal. for XT)..... $49
* Game Card, 2 Ports for AT/XT $19
* Parallel Printer Card $15

DOS

* MS-DOS 3.21 w/GW-Basic $69
* MS-DOS 3.3 w/GW-Basic..... $85

Keyboards

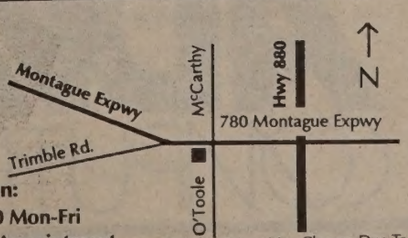
* XT 84 Keys AT Style $39
* XT/AT 84 Keys $45
* XT/AT Enhanced (101 Keys)..... $59

Power Supply

* 150 Watt for XT $47
* 180 Watt for Baby AT..... $55
* 220 Watt for AT $69

AMERICAN COMPUTER SYSTEMS

780 Montague Expressway #305
Koll Commerce Center, Bldg. 3
San Jose, CA 95131
Right Next to RYDER TRUCK RENTAL



408-432-6277

open:
9:00-5:00 Mon-Fri
Saturday by Appointment

One Year Limited Warranty on all XT/AT Systems, Parts, 90 days Labor.

All Prices reflect 3 1/2 % cash discount. Prices subject to change without notice. Not responsible for typographical errors.

Systems Prices May Change Due To Increase In Memory Prices.

AT/XT are registered trademarks of International Business Machines, Inc.

PORTABLE 386

Landmark Speed = 30MHz

40Mb HARD DISK

2MB RAMz

Fastest Portable In the World

386 SPECIAL

1 MB RAM
Keyboard
1.2 Floppy Drive

$1799

286-16MHz *SPECIAL*

Case, Power Supply, Motherboard

$1635

H.I.M.S. WORKSTATION

MYLEX 386 + 60 MB HARD DISK

Mono System 1MB RAM **$2999**

4 MB Option
19" Monitor + 80387 + Tape Backup
ALL CONFIGURATIONS CALL

MACINTOSH II

80 MB Hard Drive
19" Monitor
Extra Memory
Laser Printer

Lease From **$159** Mo.

SAMSUNG AT

60MB HARD DRIVE
1 MB MEMORY
2 SERIAL + 1 PARALLEL

Monographics System **$1699**
EGA System Add **$399**
Laser Printer H.P.....**$1635**

COMPUTERS

Macintosh + (20 MB).**$1890**
Macintosh SE **1935**
Macintosh SE (20MB) **2485**

IBM All Models

AT (30MB) **$3300**
PS/2 Mod 25.....**919**
PS/2 Mod 30.....**1187**
PS/2 Mod 60.....**3375**
PS/2 Mod 80 .....**CALL**

AST

Lowest Prices

AST 386 Computer ....**LOW**
AST 286 40 MB Hard .**2300**

386 COMPUTERS

HIMS (Mylex) **$2295**
HIMS Work Station ...**CALL**

LAPTOPS

Toshiba 1000.....**$725**
Toshiba 5100.....**4994**
NEC Multispeed EL **1495**
NEC + Hard Drive.....**2295**
Zenith 20 MB .....**CALL**

COMPAQ

386-20 MHz .....**LOW**
Portable .....**LOW**

SAMSUNG

286 + 1 MB Memory ..**$1099**
SAMSUNG 600/300 ...**CALL**

PRINTERS

IBM Proprinter II.....**$359**
IBM Pro (x24)..... **580**
IBM Pro Printer XL..... **529**
IBM ProPrinter XL24.....**799**
IBM Quiet (3) **1149**
Apple Image II.....**454**
Star NX 1000 .....**168**
Star NX 1000C.....**250**
Star NB 2410 .....**429**
Star NB 2415 .....**565**
Star ND 10 .....**289**
Star ND 15 .....**399**
Star NX 15.....**299**
Okidata 182 Plus **235**
Okidata 182 ..... **210**
Okidata193 .....**425**
Oki 192 Plus **365**
Oki 292 w/intrf **434**
Oki 293 wintf **549**
Epson LX 800 .....**220**
Epson FX86E.....**350**
Epson FX286E.....**489**
Epson LQ 1050 .....**750**
Epson LQ500 .....**349**
Epson LQ850 .....**525**
Epson LQ2500 .....**869**
Epson EX 1000 .....**479**
Tractor LQ 1000.....**39**
Toshiba 351 SX **969**
Panasonic 1592 ..... **369**
Panasonic 594 .....**525**
Panasonic 3131 .....**259**
Panasonic 3151 .....**349**
Seikosha SP 1200 .....**169**
HP Laser Jet 2 .....**1675**
Diconix 150 Inc Jet **325**
Dinconix 300 wide.....**479**
Brother HR20 .....**334**
Brother 1509 .....**359**
NEC P6 .....**455**
NEC P2200 .....**334**
NEC P7 ..... **579**
NEC 890 ..... **3300**
Citizen 120D **148**
Citizen 180D **169**
Citizen MSP10 .....**229**
Citizen MSP 15 .....**289**
Citizen MSP40 .....**269**
Citizen Premier 35 .....**399**
Toshiba 321SL.....**499**
Toshiba 341 SL.....**625**
Toshiba 351 II PS.....**CALL**

SOFTWARE

Lotus 123 Ver 2.01 .....**299**
dBase 3+1.1 .....**378**
Xerox Ventura Desk Top Publishing (1.1).....**495**
Framework 2 .....**339**
Symphony 1.2 .....**419**
Microsoft Word 4.0.....**209**
Microsoft Windows (2.03) **65**
Microsoft Works **119**
Microsoft Excel **294**
Wordperfect 4.2 .....**290**
Q and A (2.0) **204**
Prof Write **109**
Norton Utilities(4.0) **49**
Norton Advanced **99**
Wordstar Pro 4.....**229**
Micraft Mouse **115**
Logitech Mouse **79**
Multi-Mate Adv. (2) **299**
Work Peer. Libr. **59**
Manage Your Money **119**
UNIX.....**CALL**
XENIX .....**CALL**

MODEMS

1200B Internal **$69**
Hayes 1200 .....**CALL**
Everex 1200B **89**
2400 BPS.....**189**

GRAPHIC CARDS

AST 6 PK 64K.....**$125**
Ast. Prem 256K.....**189**
Ast. Ramp (#266).....**375**
NEC EGA (GB1) **199**
Video 7 Delux **199**
Video 7 VGA **289**
Quad Prosync w/mouse.**219**
Quad Ultra VGA w/mouse**319**
Genoa Hi Res. Plus **220**
Paradise VGA **279**
Paradise EGA (480).....**179**
Everex Auto (480).....**139**
Hercules color **139**
Hercules mono Plus.....**169**
Everex The Edge **199**
ATI (VIP) VGA **275**
ATI EGA Wonder **189**
ATI Small Wonder.....**119**

DRIVES

Floppy **$71**
20 MB **225**
40 MB **390**
60 MB .....**CALL**
80 MB **785**
128 MB **900**
380 MB Maxtor .....**CALL**
Tape BackUp **398**

NETWORKING

Novell Network + X Stations + Printers
Network Your Present Systems/Computers/Printers At Your Site

FAX MACHINES

Sharp.....**CALL**
Brother .....**CALL**

MONITORS

Monochrome **$89**
NEC Multisync **574**
Mitsubishi Multiscan.....**499**
Sony 1303.....**585**
Samsung EGA **360**
NEC XL.....**1975**

CHIPS

256K .....**CALL**
80386-16 .....**CALL**
80386-20 .....**CALL**
1 MB Chips.....**CALL**

SCANNERS/PLOTTERS/ DIGITIZERS

H.I. Plotter .....**CALL**
Summa Graphic .....**CALL**
Roland .....**CALL**
H.P. Plotter .....**CALL**

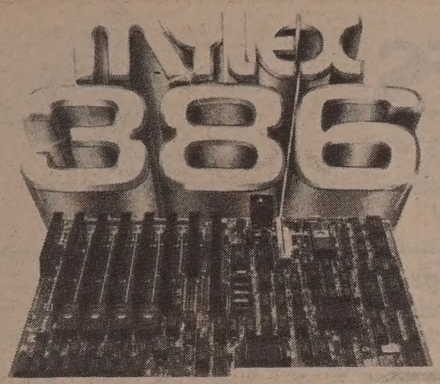
ADVANCE COMPUTER SYSTEMS

3 LOCATIONS TO SERVE YOU

FAX (408) 749-9449

SUNNYVALE 665 GRAPE AVE. **(408) 732-6200**
WALNUT CREEK 1987 N. MAIN ST. **(415) 945-8011**
SAN FRANCISCO 1231 MARKET ST. **(415) 552-2902**
(Inside San Francisco Hotel Mezzanine, Market & 8th)

(A) Prices subject to change
(B) Cash Prices
(C) Financing Available
(D) Not responsible for typo error
(E) Subject to stock on hand
(F) Diskettes in Min. Qty. 50
(G) Prices vary at stores



The 386 Center

The MYLEX 386 System Board!!

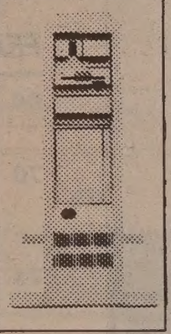
The 386 Board Features:

- Intel 80386 6/16 MHz Keyboard selectable
- 1MB or 4MB of 32 bit RAM on the system board
- 64KB or 32-bit no wait-state CACHE memory
- BIOS by AMI
- 6-16 bit slots & 2-8 bit slots
- Battery backup for Clock/Calendar and Hardware Setup
- Socketed for 80287 6/10 MHz coprocessor
- Norton Rating 23.5
- 1 Year Warranty
- Made in USA

FASTEST 386 IN THE WORLD At This Price CALL

386 CENTER

Mylex Board . . . . . **LOW**
Micronics Board . . . . . **LOW**
Intel Board . . . . . **LOW**
Memory Chips
Static Column . . . . . **CALL**
4 MB Board For Compaq 386 + Memory . . . . . **CALL**



FOR PROFESSIONALS

H.I.M.S. WORKSTATION

386 Computer, 240 MB hard drive, 60 MB tape. Targa board, Forte boards, digitizers, plotters, slides, workstations, laser printers, 700 cps printers, networking, CAD. We set up & install custom configurations

"The HIMS 386 leaves IBM PS/2 Mod. 80, the Compaq 386 & PC Limited 386/16 in the dust" **$Call**

Gold Authorized Dealer

NOVELL

Server/Work Station:
6/8 MHz 286, 12 slots, 238W P/S, S&P Ports, Monitor, 360K Flpy, 1 MbRAM, 44 Mb H.D.
NOVELL Non-Dedicated Netware 286
ARCNET 4-Port Passive Hub
3 ARCNET Cards and Cables up to 100 Feet Each.
2 SUPERturbo XT 640K, 10MHz, 8088-1, 360K Floppy and "AT-Style" Keyboard, "FCC" Approved.
3-Amber Monitors Included.

****A COMPLETE NETWORK****

RETAIL . . . . $9,258 **NOW ONLY $5,388**

*Leasing available to qualified businesses.

CONNECTIVITY

CONSULTATION AND INTEGRATION QUESTIONS??
CALL OUR EXPERT SALES & TECH STAFFS!!
NOVELL ADVANCED NETWARE STARTER KITS AND SERVERS . . . . CALL

WESTERN DIGITAL

StarLan/Novell Starter
1 Star and 2 StarLink Cards
3 25 Foot Cables and NetBios
Novell Advanced Netware 286 v.2.0A
$1,795

ArcNet Starter Kits with Novell Software

NOVELL

Advanced NetWare 86 v 2.0A
3 CompuPro PC Arcnet Cards and Cables
1 CompuPro 4-Port Passive Hub

Complete Kit **$1,978**
Above Kit with **4PC**-Arcnet Cards **$2,149**
Above Kit with **5PC**-Arcnet Cards and an 8-Port Active Hub **$2,695**
Intercontinental Micro Systems-MS-CPS-PC PC/XT **AT Slave CPU Card** and Graphics Terminal with Software to Install in Novell Environment **$1,095**
ARCNET Compatible 1/2 Card **$235**
ARCNET 8-Port Active Hub **$449**
ARCNET 4-Port Active Hub PC/Card **$225**
ARCNET 4-Port Passive Hub **$39**

PLOTTERS

Calcomp 1041 GT **4,498**
1042GT **7,650**
1043GT **6,576**
1044GT **10,750**
Enter FB1000, AD **3,023**
GTCO MD-7, 4 button **767**

Hewlett-Packard
7440, 8 pen, A size **986**
7475A 6 pen, AB **1,442**
7550A, 8 pen, AB **2,970**
7570, 8 pen **3,896**
7595A, 8 pen, A-E **8,044**
7596A, 8 pen, A-E rl. **9,590**

Houston Instruments
PC 695, 4 pen, AB **578**
DMP 29, 8 pen, AB **1,653**
DMP 41, 1 pen, CD **2,157**
DMP 42, 1 pen, CD **2,157**
DMP 51, 1 pen, CD **2,877**
DMP51MP, 14 p., CD **3,381**
DMP52, 1 pen, CD **2,877**
DMP 52MP, 14 p. CD **3,381**
DMP 56A, 1 pen, A-E **3,957**
DMP 56C, 1 pen, A-E **4,101**
DMP 61, 1 pen, AD **3,381**
DMP 62, 1 pen, AE **4,677**
MP 6, 6 pen **647**
MP 60, 6 pen **603**
DMP 6x buffer **829**
Scancad **2,434**
Ioline LP3700 . . . . . **3,211**
LP3708 . . . . . **3,593**
Mitsubishi CHC-65 . . . . . **7,304**
Roland DXY 880 . . . . . **1,004**
DXY 980 . . . . . **1,238**
Versatec . . . . . **CALL**

DIGITIZERS

Calcomp
12″ x 12″ **349**
24″ x 36″ **3,970**

Hitachi
1111, Tiger w/12 bu **699**
1515 w/12 button **1,395**
2222 w/12 button **2,812**
2436 w/12 button **3,582**
3648 w/12 button **4,401**
3648BL w/12 button **6,914**

Houston Instruments
PC PAD **315**
DT11AA, 11 x 11, 1 bu. **628**
DT114, 11 x 11, 4 bu. **688**
TG 1011, 11 x 11, 16 bu. **853**
TB 1017, 11 x 17, 16 bu. **884**
TG 8011, 11 x 11, 16 bu. **895**
TG 8017, 11 x 17, 16 b. **1,526**
TG 8024, 18 x 24, 16 b. **2,498**
TG 8036, 24 x 36, 16 b. **3,245**

Summagraphics
12″ x 12″ **365**
24″ x 36″ **3,180**

High-Resolution Monitors

NEC MULTISYNC XL **1975**
Amtron . . . . . **CALL**
Conrac 7351 . . . . . **2,709**
Control Systems 19/64 . . . . . **2,680**
Hitachi CM2073 . . . . . **2,695**
Intercolor Megatrend **1,430**
Microvitec . . . . . **CALL**
Mitsubishi
C3922K, LPK **1,881**
HG6905BK **2,755**
C6922AGK **2,173**
C6922LPK, PK **2,211**
C8652AK **1,760**
C89A8NB **2,720**
C9919BK **2,562**
C9920BK **2,387**
FG6600AK **2,126**
NEC Multisync **574**
Sony Multiscan **620**

ADVANCE COMPUTER SYSTEMS

WALNUT CREEK 1987 N. Main St.
(415) 945-8011

SUNNYVALE 665 Grape Ave.
(408) 732-6200

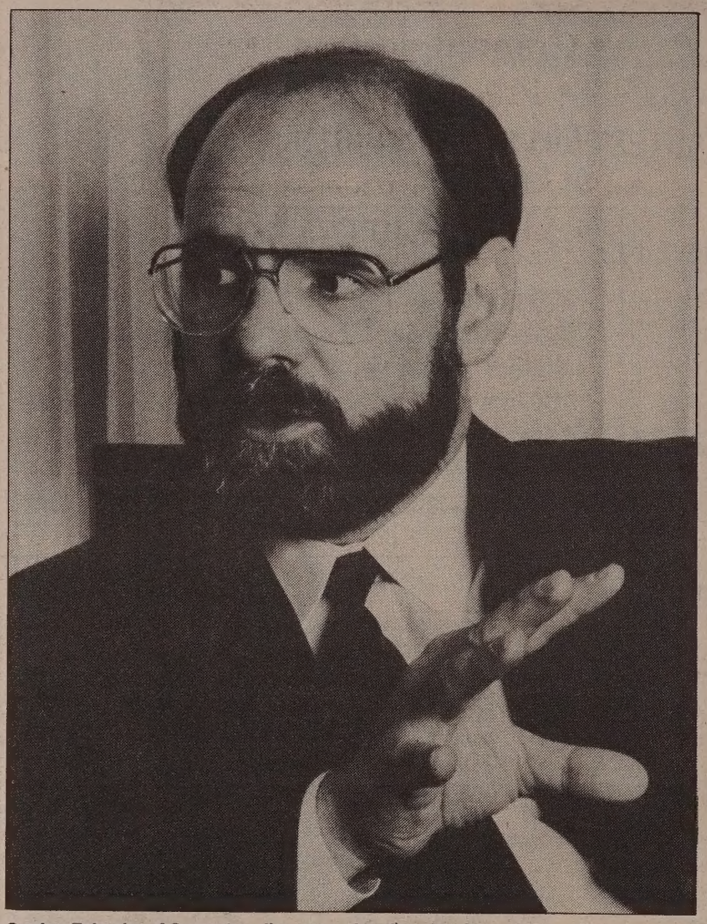
SAN FRANCISCO 1231 Market St.
(415) 552-2902

inside San Francisan Hotel main floor Market & 8th Mezz
Not responsible for typographic errors
Subject to stock on hand Prices subject to change

3 LOCATIONS TO SERVE YOU

AUGUST 1988 ISSUE #46

MICROTIMES™



Gordon Eubanks of Symantec discusses the changing face of the personal computer industry. See page 52.
Cover and contents photos: Billy Douglas/Pat Johnson Studios
Location: Stanford Court Hotel, San Francisco

OPINION

46 Industry Issues
Contributing editor Brock Meeks files a report on employee censorship by online conferencing systems.

50 Jim Warren's "Realizable Fantasies"
Jim Warren on new uses for obsolete hardware, software in the schools, and other matters.

190 Dvorak's Last Column *By John C. Dvorak*
In a column sure to provoke controversy, Dvorak unveils a reader's suggestion about how to sell computers to women.

DEPARTMENTS

10 Letters

14 Calendar Of Events

24 News And Analysis *By Paul Hoffman*

44 Kenfil Software Chart

82 Book Buyers Guide

86 PC Buyers Guide

162 User Group Network

184 Classifieds

COVER STORY

52 Workgroups In Business Computing
By Mary Eisenhart
Gordon Eubanks, CEO of Symantec, which markets and develops software for a variety of business environments, discusses the challenges of the emerging multi-user, multi-vendor workplace.

FEATURES

64 Installing A New Hard Disk *By Wayne A. Yacco*
The do-it-yourself approach to upgrading your PC's storage.

70 Evaluating C Compilers For The PC
By Wayne A. Yacco
Borland's Turbo C, Microsoft's QuickC and some alternatives.

74 Forth: An Orphan Comes Of Age *By Jack Woehr*
Long appreciated by a devoted minority, the Forth programming language is coming into its own with the advent of new, more powerful hardware.

76 PS/2 Clones: Just Around The Corder
By Aubrey Pilgrim
Build-your-own-clone expert Pilgrim is bullish on PS/2 clones, including the home-grown variety.

MAC @ WORK

89 FullWrite Professional: First Impressions
By Mary Eisenhart
First of two parts on Ashton-Tate's integrated word processing environment, which combines unique and powerful features with sometimes prohibitive memory requirements.

106 HyperCard *By Birrell Walsh*
Sound and graphics tools for the stack designer.

110 BMUG *By David Morgenstern*
BMUG asks: Do you need System 6.0?

114 Macintosh Buyers Guide
Products to support Novell's NetWare, and more.

REVIEWS

124 IZE *By Steve Guttman*
Persoft's revolutionary Personal Information Manager gets good marks.

128 DataEdge *By Steve Guttman*
This package from PC Manager offers a powerful language and useful features, somewhat hampered by a clumsy interface.

132 GrandView *By Birrell Walsh*
Symantec's personal Information Manager combines outstanding outlining capabilities with limited flexibility in data handling.

140 Other Reviews

COLUMNS

142 Amiga *By Matthew Leeds*

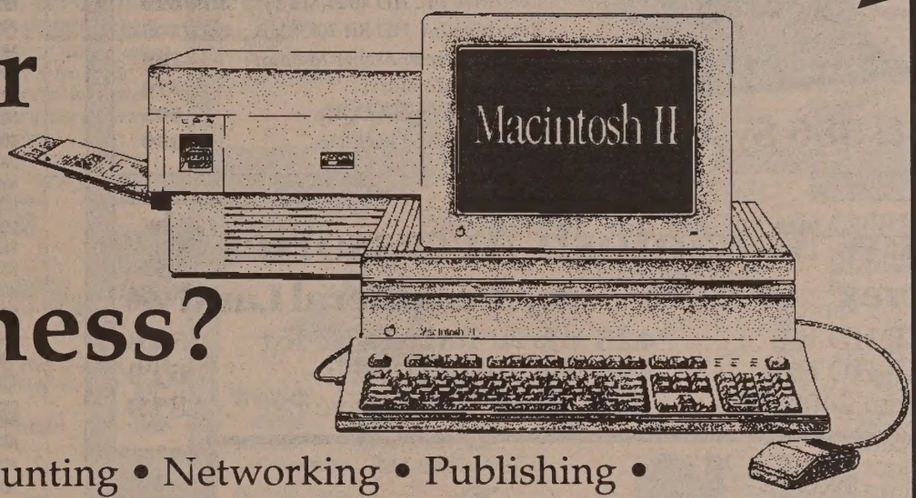
144 Atari ST *By David Hawkins*

148 Apple II *By Mike Markowitz*

152 UNIX *By Bennett Falk*

What can Macintosh do for Your Business?

• Communications •
• Presentations •
• Financial Analysis •
• Document Processing •
• Mac to MS Dos •



• CAD • Accounting • Networking • Publishing •

The Best Way to find out is to visit your nearest Computer Attic. Whether you work in a large corporation or out of your own home, Macintosh has something to offer you. Even if you have already made an investment in MS DOS, the technology and products exist today to bridge that gap and allow you to retain that investment while still benefiting from the Macintosh Advantage. Computer Attic's organization is staffed with people who can address your specific needs - Accounting, Publishing, Video Presentations, Networking, Mac-DOS Communications, and General Office Productivity. With hundreds of large-scale and single system installations under our belt, we are prepared to successfully address your needs - be they small or large.

Macintosh SE 60 MB Now Available

Computer Attic has invested heavily in the development of it's people and in the resources necessary to support our customers. ServiCenters are located in each store and On-Site Service is always available. No matter what your need may be, Computer Attic is the place to go because we are more interested in creating a long term customer relationship than in making a quick sale.

Authorized Dealer

COMPUTER ATTIC

Palo Alto
382 University Ave
(415) 322-0639
Corp. Sales: 322-4800

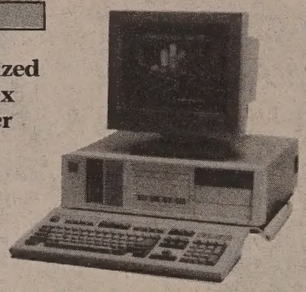
Cupertino
10251 S. DeAnza Blvd
(408) 253-5300
Corp. Sales: 253-5300

San Francisco
217 Sansome St.
(415) 398-4541
Corp. Sales: 398-4543

The *Best* In Bay Area Products And Networks

EVEREX
COMPUTER SYSTEMS DIVISION

Authorized Everex Dealer



286 & 386 Systems

Everex Accessories

EGA Micro Enhancer	$119
EVGA	259
1200B Modem (Int.)	69
2400B Modem (Int.)	169
2400B Modem (Ext.)	199
Everdrive Int. HD 40/80MB	399/699
Everdrive Int. HD Kit 20/30MB	265/305
14" Flat Screen Amber Monitor	129
14" EGA Monitor	370
60MB Ext. Tape Back-Up	695
40MB Int. Tape Back-Up	349

New Macintosh Accessories

by Everex (EVEREX COMPUTER SYSTEMS DIVISION)

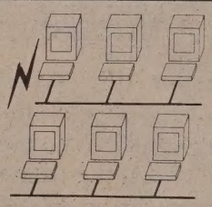
Mac 20MB HD Int.	$425
Mac 20MB HD Ext.	495
Mac Modem 2400B Ext.	239

by Peripheral Land

PL 20 Turbo Drive Ext	$519
PL 30MB HD Ext	619
PL 50 Turbo Drive Ext	819

NOVELL Advanced Netware

10 NET LOCAL AREA NETWORK SYSTEM



Local Area Networks

- We provide hardware & software installation & a full range of LAN services
- Lease to own option
- Maintenance/service contracts available

PRINTERS

NEC P7	$599
Star P2200	365
Star NX 1000	189
Panasonic 1080i	179
HP Laser Jet Series II	1649
Silver Reed Exp 600	319

SPECIALS

1-2-4 Memory Expansion Board for HP Laser Jet Series II	$139
HP Series II Toner Cartridge	79
Multi I/O	55
Mono Graphic Card	45
Color Card	45
Joy Stick	25
Computer Paper	$29
Genius/Logitech Mouse	69
AB Switch Box	39
Mono Monitor	75
Color Monitor	250
720KB 3½" Drives	95
1.44MB 3½" Drives	135

Pro-386 System Made in USA
16MHz, 1/0 w/state, 1.2MB floppy drive, 1MB RAM, monographic card & monitor, keyboard
$1949

Turbo 8088 System
4.77/8MHz, 360K floppy drive, 256KB RAM, monographic card & monitor, keyboard
$439
w/20MB Hard Disk $729

Pro-286 System Made in USA
8/10MHz, 1/0 w/state, 1.2MB floppy drive, 512KB RAM, monographic card & monitor, keyboard
$895
w/40MB Hard Disk $1285

NEC Multispeed Laptop from $1249
Portable 8088/286/386 from $995

Hurry while supplies last-limited quantity!

ATC Professional Computer

1504 Franklin Street,
Suite 306
San Francisco, CA 94109

(415) 776-1520

Service Contracts Available
Dealer Inquiries Welcome
Sales, Upgrades, Repair Services

IBM is a registered trademark of International Business Machines Inc.
Not responsible for misprints. Prices subject to change without notice.
Macintosh & Apple are registered trademarks of Apple Computer Company

MICROTIMES

Consumer Audit BPA

PUBLISHER/EDITOR
Dennis Erokan

CREATIVE
CREATIVE DIRECTOR Lee Ann Nelson
MANAGING EDITOR Mary Eisenhart
EDITORIAL ASSISTANT Tony Rocco
PRODUCTION MANAGER Doug Boone
ASSISTANT PRODUCTION MANAGER Sheryl Manchester
ASSISTANT ART DIRECTOR Michael P. Didier
PRODUCTION ASSISTANT Mary Beth DeSantis
ART STAFF David Cunha, Lisa Lusk, Missy Mote, Heidi Sommer, Deborah Venezia
CAMERA OPERATOR John Moorehead
NEWS EDITOR Paul Hoffman
CONTRIBUTING EDITORS Robert D. Athey, Jr., Robert Grant Beauchamp, Bennett Falk, Helmi Kobler, Matthew Leeds, Michael Markowitz, Ben Means, Jean Means, Brock Meeks, Ken Milburn, Jeff Spurrier, Birrell Walsh, Jim Wolcott, Wayne A. Yacco
CONTRIBUTING WRITERS Sue Albert, Lenny Bailes, David Batterson, Steve Guttman, David Hawkins, Ed Kahn, Woody Liswood, Nancy Mulvany, Aubrey Pilgrim, Charles Seiter, Warren Sirota, Stephan Wickham, Jack Woehr
CONTRIBUTING PHOTOGRAPHERS Ken James, Michael Jay, Pat Johnson, Jim Marshall, Ann Summa
EDITORIAL CONSULTANTS Don Hamilton, Pat Hamilton
TYPESETTING Image Factory, The Typesetting Shop, Inc.

ADMINISTRATION
ASSOCIATE PUBLISHER Miles Hurwitz
ACCOUNTING MANAGER Linda Schenk
ASSISTANT ACCOUNTING MANAGER Lesley Hunter
ACCOUNTING Brian DeLuca, Patrick Emerson, Rosemary Galten, Carol Hunter, Brian Murray
PUBLISHER'S ASSISTANT Erica Stein-Oakley
ADMINISTRATIVE ASSISTANTS Greg Cline, Jill Stauffer

ADVERTISING
ASSOCIATE PUBLISHER Joe Amadeo
ASSISTANT TO THE ASSOCIATE PUBLISHER Marianne P. Stone
ADVERTISING DIRECTOR Chuck Stanley
NATIONAL ACCOUNT DIRECTOR Bill Reefer
SC SALES MANAGER Marcus Fields
ACCOUNT DIRECTORS Barry Green (Northern California), Reece Franklin (Southern California)
SENIOR ACCOUNT EXECUTIVE Jane Shepherd
ACCOUNT EXECUTIVES Susan R. Bower, Lee Salem
ADVERTISING ASSISTANT Renèe Delucchi (San Francisco)
L.A. OFFICE MANAGER Sally Engelfried
National Reps.: Carol Oppenheimer, John Lockhart

DISTRIBUTION
DISTRIBUTION MANAGER John Erokan
Art Holland, *Assistant Manager/LA*
DISTRIBUTION STAFF Gerri Anderson, John Clefstad, Roe Eyth, Danny Fernandez, Frank Grygus, Eliot Kleinberg, Kirk Lanier, Ron Lubben, Jac Michanovic, Paul Pierron, Joseph Rafalo, SDS, Alan Spector; Racks by Free Distribution
MICROTIMES FOUNDERS Dennis Erokan, Don Hamilton, Pat Hamilton

This Vol. 5. No. 8, August 1988, Whole No. 46 MicroTimes, California's Computer Magazine, is published by BAM Publications, Inc., 5951 Canning St., Oakland, CA 94609. Phone (415) 652-3810. Los Angeles Office, 1800 N. Highland, Suite 220, Hollywood, CA 90028. Phone (213) 467-7878. San Jose Office, 36 Harold Ave., Suite 8, San Jose, CA 95117. Phone (408) 244-4400. Anaheim Office, 800 S. Brookhurst, Suite 1F, Anaheim, CA 92804. Phone (714) 776-2900. MicroTimes™ is © 1988 by BAM Publications, Inc. Subscriptions rates: 12 issues, U.S.: 3rd Class $24 (Allow 3 to 4 weeks for delivery), 1st Class $50 (Allow 1 to 2 weeks for delivery). MEXICO & CANADA: Surface Mail $40 (Allow 4 weeks for delivery). Air Mail $65 (Allow 1 week for delivery). OVERSEAS: Surface Mail $40 (Allow 6–10 weeks for delivery), Air Mail $160 (Allow 1 week for delivery). To receive sample issues, please send $2 ($4 for overseas) to cover postage costs. Back issues are $4 each.

All rights reserved. Reproduction in whole or in part without permission of Publisher is strictly prohibited. Unsolicited material is gratefully accepted, but we can't be responsible for returning it unless it is accompanied by a stamped, self-addressed envelope. The staff and management of MicroTimes do not advocate or encourage the use of any product or service advertised herein for illegal purposes.

Below Cost Printing Calculator w/pur. $9.88 reg. 39.95

One of the *newest*, largest, and lowest priced displays in the USA!

WE BEAT EVERYBODY WE TAKE TRADE-INS

Let's Make A Deal Sale

We're Wheeling & Dealing & We're Crazy!

Thank you to our thousands & thousands of customers for making this give away possible!

SUPPLIES

BELIEVE IT OR NOT
Brand New
Interface Loaded
Office Typewriter
Only $99.88 ($695 value)
Trade in your working IBM Selectric II or III with correction and dual pitch and receive this offer for only $99.88

Laser Cartridges $75.88

Ribbons $3.6/doz

Repair Service

PRINTERS/TYPEWRITERS

OLIVETTI - World's Best
CX 880 ..... 368.88
901D (12K mem) 468.88

SILVER REED
EP34 w/int 299.88

ROYAL Typewriters
Beta 8200 ..... 299.88
Beta 9000 ..... 2K mem 378.88

OLYMPIA

Carrera/199.88
Compact S Call/Int.
Compact I 299.88

Startype Office ..... Call
121 XL 80K Spellwrite 288.88
130i ..... Call
125XL (7K mem) 349.88
Orbit/Int Heavy Duty ES95 ..... 399.88

brother
AX/10 ..... 129.88
CE58 ..... 3K mem 268.88
CE50 ..... 199.88
EM100 Heavy Duty 469.88
EM 5 (office machine) 369.88

SHARP
370 17" carr. Office 399.88

EPSON
300 ..... 8K mem 226.88

PANASONIC
210 ..... 6K mem 199.88
TK 35 ..... 4K mem 268.88

100's of miscellaneous electric & electronic typewriters from 59.88
MUST SELL NEW, USED, DEMOS

SMITH-CORONA

FINALLY, AFFORDABLE WORD PROCESSING
- High quality 12" monitor with 80 characters x 20 line display
- Built-in menu that lists action choices and guides you every step of the way
- 128K character disks memory
- Hand sized keypad with only 7 command keys

$499.88

PWP 6 w/TF 538.88
Smith Corona PWP 12. 328.88 ..... 499.88
Smith Corona PWP 14. 448.88 ..... 629.88
Amstrad 388.88
Magnavox (w/rebate) 549.88

Sterling 129.88
Smith Corona X2000 ..... 169.88
5000/5100 ..... Spellwrite Word Erase Electronics 188.88
6200 ..... 268.88
6600 ..... 12K mem 299.88
6700 ..... 16K mem 375.88
5250 ..... 228.88
8500 ..... 16K mem 475.88
Other Models

True Blue 386 is the best!

1 MB on 2 MB Board
20 MHz
32 Bit Memory
1.2 Floppy
Monitor
Runs EGA, CGA, & Monochrome on board.
Call for details.

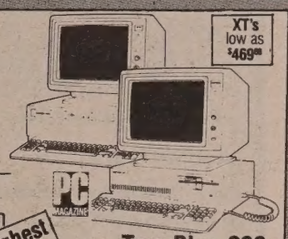
$2259.88

Computers

AMAX 286
Loaded - 20 Meg System
Only $1199.88

True Blue 286
Loaded - 20 Meg, 1 MB System
Only $1499.88

Highest Quality



XT's low as $469.88

True Blue 286 As low as 899.88

1000's of CRAZY PRICES

HOT PRINTERS! DAISYWHEEL, DOT MATRIX, & LASERS

DAISYWHEEL PRINTER Par 169.88

DYNAX
FORTIS ..... DM 2010 ..... 299.88
BROTHER ..... DM 2015 ..... 385.88
1 YR Guarantee Better than Epson

DX 15XL Serial 299.88
DX 25 7K 388.88
1310 ..... 239.88
DH 45 ..... 678.88

brother
1109 ..... 218.88
1509 ..... Free T/F 378.88
1709 ..... 539.88
HR40 ..... 628.88

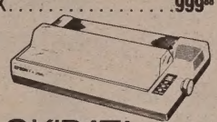
HEWLETT PACKARD
Laser Series II 1699.88
Laser Jet Plus ..... Call
Laser Jet 500 ..... Call

C.ITOH
715A 949.88
815 ..... 1428.88

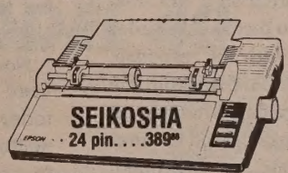
Panasonic
1080i Apple ..... Call
1592 ..... 479.88
1524 (24 pin) 599.88
Laser Printer 1788.88

STAR GEMINI
SG 10 ..... 228.88
2410 (24 pin) 499.88
1215 (wide carr.) 299.88
Other Models ..... Call

TOSHIBA
1000 ..... 868.88
321 SL ..... Call
341 SL ..... Call
351C 999.88
351 ..... 899.99
321 Par & Ser ..... Call
351 SX 999.88



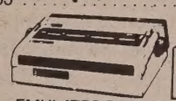
OKIDATA
Okimate 20 ..... 135.88
192 Plus ..... Call For Latest Prices 299.88
193 Plus 488.88
292 P 489.88
393 P 989.88
Laser Printer 1388.88



EPSON
LQ 800 ..... 478.88
LQ 1050 ..... 768.88
SL 80 (Com 64) 229.88
SL Imagewriter 249.88
24 Pin (new) 399.88
Others

IBM
Proprinter 388.88
Other models ..... Call

DIABLO
625 ..... HOT 529.88
635 ..... 888.88



THE BEST

EMULATES DIABLO
SILVER-REED
Exp 600 (25 CPS) 399.88
Exp 800 (40 CPS) 689.88

NEC
P5 XL (24 pin) 1048.88
3550 ..... 799.88
2200 ..... 358.88
P7 (24 pin) 628.88
Other models ..... Call

JUKI
6100 ..... 355.88
6300 ..... 669.88
5510 ..... Color 359.88

Canon
BJ 80 ..... 469.88
LPBP-8 Model II 1688.88
Other Models ..... Call

FUJITSU
Daisymax 320 ..... 999.88
DX 2100F 379.88
DL 3400 Color ..... More Models 789.88
DL 3300 ..... 599.88
DX2300 ..... 478.88
DL2400 ..... 99.88

CITIZEN
MSP 40 ..... Call For Latest Prices 379.88
MSP 15 ..... 374.88
MSP 55 ..... 549.88

Sharp Z55 ..... 619.88
Sharp Z70 ..... Call
Sanyo 599.88
Ripro Jr. 588.88
Sharp 7100 ..... 979.88
Ripro 2050 ..... 999.88
Sharp 8100 ..... 2288.88
Sharp 8260 ..... 2788.88
Ricoh 3060 ..... 1888.88

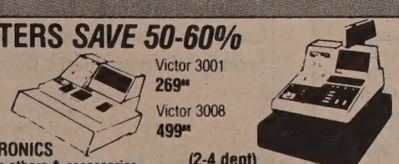
COPIERS
Canon
PC
Cartridges
$49.88

IBM TYPEWRITERS
Selectric I . . . $199.88
Selectric II. . . $349.88
Selectric III . . $589.88

CANON
350 8K mem. $499.88
500 7K mem. $599.88
300 ..... 399.88

CASH REGISTERS *SAVE 50-60%*

Sharp 1017 169.88
Sharp 1050 249.88
Maxi 179.88
Sharp 2050 299.88
Victor 3001 269.88
Victor 3008 499.88



For any size business
ELECTRONICS We have others & accessories
(2-4 dept)

Laser Cartridges $75.88

SUPPLIES & ACCESSORIES

NEW LOCATION

YOU MUST BRING AD TO GET THESE PRICES

DEMO INC

102 Grand Ave., So San Francisco, CA 94080
(415) 872-6668

HOURS
M-F 9-5 Sat 10-5 Thurs till 7

All prices and specifications are subject to change without notice. Not responsible for misprints.

CALL FOR DEALER PRICES

CORPORATE DISCOUNTS

THE COMPUTER INTERFACE SPECIALISTS

Specializing in dealer, department store, mail order and premium sale. All offers limited. Call or come in for details. Cash, credit card, check or money order. We ship UPS — add $5.00 for handling.

REPAIR SERVICE

PHONE ORDERS WELCOME

master charge VISA

1000's TO CHOOSE FROM • 1000's IN STOCK!

Super Specials
Keytronic KB's 55.88
Seagate 20 Meg HD w/Controller 254.88
Autoswitch CGA (640x480) 155.88
Super I/O & EGA Card 119.88
Microsoft Compatible Mouse 49.88
Bare Bones 286
(Case, PS, MB, 512K, Bios) 589.88
Mitsubishi Diamond Scan
EGA 920x580 ..... 499.88
Magnavox EGA 399.88
IBM Cables ..... from 5.88
Canon Cartridges 49.88
Ribbons ..... 36/doz.
Laser Cartridges . . . $75.88

FAX MACHINES
Sharp 150 ..... 1188.88
Sharp 300 ..... 1299.88
Panasonic KX 15 ..... 1369.88

Frustrated Reader Reports Happy Ending

From time to time we receive a report from one of our readers of some difficulty they're having with a particular product or service advertised in *MicroTimes*. Such feedback is a matter of serious concern to us.

Recently we heard from David Becker of Washington, who was having problems getting a printer he'd ordered from one of our advertisers. His frustration was evident, and, as the following correspondence shows, we were able to help him resolve the situation.

We can't promise a happy ending to everybody, of course. However, we want to hear from you if you're having such difficulties, so that we can help if possible to insure mutually beneficial relations of *MicroTimes* with its readers and advertisers. — *eds.*

Dear Mr. Erokan:

As a Seattle-area subscriber to *MicroTimes*, I want to report that I am well served by the editorial content of the publication. The April issue's interviews with Theodor Nelson and Jim Warren were exceptionally interesting and comprehensive, and John Dvorak was in prime form. (I think he writes more potently for *MicroTimes* than he does for the other publications that use his talents.)

When I receive value from a publication, I am motivated to support its advertisers, knowing that ad revenues are what sustain the life of the publication. Throughout the years I've been involved with micros, I've bought everything from shareware to complete computers and printers through the mail, with complete success and satisfaction.

My luck has changed decidedly for the worse in dealing with a firm which advertised in *MicroTimes*. (Please understand that I do not in any way want to suggest that I view you or *MicroTimes* as having any responsibility whatsoever for what follows.)

In the March issue, a San Francisco-based retailer advertised a good price on a NEC-890 PostScript printer. I called to discuss the order on March 14 and, satisfied with the response, sent a cashier's check for $3224. I was told the printer would be shipped two days after receipt of the money. When two weeks passed without receiving it, I called. They said it had shipped, but that UPS returned it for being over their weight limit. The salesperson said it would be sent via motor freight; 10 days have passed with no further notification.

These problems will be resolved somehow; however, experiences such as these make it unlikely that I will be able to feel confident about suppliers who advertise in *MicroTimes*. If others also are having disagreeable encounters like these, they won't place orders, the offending advertisers will go out of business, and you'll have more difficulty obtaining revenue to produce the publication. Not a pleasant prospect.

I don't expect a reply or any action on your part. Mail order is a *caveat emptor* environment, but I thought you might want to know that some of your supporters and admirers are getting clobbered out here.

David J. Becker
Kent, WA 98031

Dear Mr. Becker,

Thank you for your interest in MicroTimes. *I am glad to hear that you are pleased with our publication.*

However, I am sorry to hear that you have been having problems receiving your merchandise from our advertisers. We were able to have our sales rep, Lee Salem, call the advertiser and explain the situation to them and they are going to look into it. So, hopefully you will get some action soon.

Dennis Erokan
Publisher/Editor

Dear Mr. Erokan:

Thank you for your most generous, expeditious, and effective intervention on my behalf relative to difficulties associated with your advertiser. It was certainly not my intention to embroil you and your staff in this matter; however, your intercession appears to have had an efficacious result.

When I made my — by now — routine weekly call to the vendor on April 8 (having written you on the 6th), I was informed by a polite and persuasive saleslady (1) that the salesperson who had taken my order had quit the company, but that, nonetheless, "You will receive your NEC Silentwriter next Thursday [April 14]."

Needless to say, "next Thursday" came and went but no NEC 890 appeared. So I called today [April 15] and was able to discuss the matter with the manager. He told me that he first became aware of the mixups after hearing from your sales rep, Lee Salem, who was investigating the complaints in my letter. He knew the previous history of the order and told me that the printer would be shipped April 19 and that I should have it April 26. If that happens — and please understand my skepticism — I'll let you know.

Your April 13 letter was here when I returned home from work today, and I want to thank you so much for your personal concern.

David J. Becker
Kent, WA 98031

Dear Mr. Erokan:

As you can see, by the typeface of this letter, I finally received the NEC LC-890 Silentwriter. Now that it's purring away here, my satisfaction level is stratospheric.

Thanks again for your influential assistance. It made a crucial difference in this case.

Whoopee!!

David J. Becker
Kent, WA 98031

A Point Of Accuracy

In the June issue of *MicroTimes* you published an article on desktop video by Ben and Jean Means. Although they admit "no greater knowledge of the English language than what it takes to phone for pizza," a more honest disclaimer would have included their purported subject matter.

One example was their confusion of video scanlines with "lines of resolution." "Lines of resolution" is actually an expression of how many black and white dots can exist on a single scanline without blending together into grey. If every scanline consisted of this same dot pattern, then the complete picture would appear to be one of tightly spaced vertical lines. Thus "lines of resolution" is a measure of horizontal, not vertical, resolution. This kind of error is bad enough when made by consumer video retailers, but for you to perpetuate and legitimize it in print is no joke but an extreme disservice to your readers.

Regarding their other disputable assertions: it's true that Amigas are used in professional video, but not in the way that the authors suggest or would understand; the Mac II does not output NTSC video, not without around $7,000 worth of additional boards and equipment; and Targa boards are not "a lot of money" for an article that talks about $15,000 desktop video workstations. Although probably a misprint, there is no such thing as 3/4" Betacam. Betacam uses 1/2" tape, identical in size though not in composition to Betamax home video tape.

Typically, they did not include any mention of the "genlocking" abilities of the Amiga. This enables the Amiga to synchronize its video output with another, external video source such as a VCR, and to cleanly mix the two into a single product; although optional this inexpensive add-on is really what makes the Amiga shine. But someone else is going to have to tell your readers.

Bud Ryerson
San Francisco

P.S.: The Amiga is used in professional video as a system called the "Boris." It is used to quickly generate "trash mattes" for keying out unwanted areas of a picture or an effect. In the Amiga's high-res mode, working with a 16 step grey scale for a palette, a smooth, clean, soft-edged matte can be created. This technique and its applications are worthy of an article in themselves.

Ben and Jean reply:

The confusion of video scanlines with lines of resolution was indeed unfortunate. These statements were a result of extensive interviews with several professional video engineers whose explanations were at times contradictory and unclear. The lack of understanding of these concepts is suffered not only by "consumer video retailers," but among many video professionals as well. Thanks to Mr. Ryerson for his clarification on this subject.

However, Mr. Ryerson's statement that "it's true that Amigas are used in professional video, but not in the way the authors suggest or would understand" is way off base. We have interviewed top industry professionals and are well aware of how

SUPER FAST

High quality American Designed, Engineered and American-Built, powerful 80286-12 MHz super performance computer systems for CAD/CAM workstations, scientific engineering, industrial, medical, local area networking, desktop publishing systems and more applications.

MSE 286-12 MHz

- The newest ZyMOS POACH
- 80286 microprocessor, 6/12 MHz
- 512K RAM, expands to 1 MB
- 1.2 MB Teac floppy drive
- W.D. hard disk/floppy disk controller
- Clock/calendar with battery backup
- keyboard
- 200 W power supply
- 8 expansion slots
- True Read/Write "0" wait state
- 72 hours burn-in test
- 16 MHz performance

OUR PRICE $895

☆ *Special Offer* ☆
EGA PORTABLE 386
Vertical 386-20 Mhz
$CALL

Same as above system with 10 MHz speed Our Price $845 1.44 MB Micro Floppy Drive $159

PC Week Editor's Choice

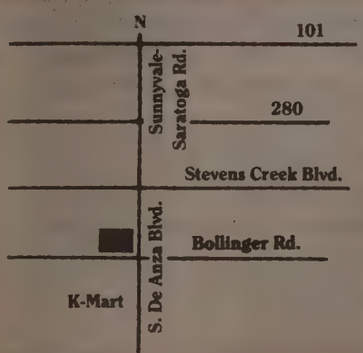
80386 20 MHz MODEL 40

- 80386 32-bit CPU, 20/8 MHz
- 1 MB high speed static column RAM
- 32-bit memory, expands to 10 MB
- W.D. hard disk/floppy disk controller (ESDI controller also available)
- Teac 1.2 MB floppy drive
- 42 MB fast hard drive (28ms)
- 200 W low noise power supply
- 101-key enhanced keyboard
- Clock/calendar with battery backup
- Serial and parallel port
- Support 80287 & 80387
- Xenix System V, OS/2, PC MOS 386
- Read/Write "0" wait state
- 25 MHz performance

Complete $2495 30 MHz PERFORMANCE $2895

EXPANSION OPTIONS

Mono Monitor & Graphic Card $129	Seagate ST-138 30 MB (28ms) $399	WYSE 700 & Monitor (1280 x 800) $649
Color Monitor & Graphic Card $329	Seagate ST-4053 44 MB (28ms) $499	NEC Multisync II Monitor (800 x 600) $599
EGA Monitor & Graphic Card $529	Micropolis 1333 44 MB (28ms) $599	NEC Multisync Plus Monitor 15" $899
Seagate ST-225 20 MB (65ms) $269	Micropolis 1335 72 MB (28ms) $699	NEC Multisync XL Monitor 19" $1999
Seagate ST-125 20 MB (28ms) $299	Seagate ST4096 80 MB (28ms) $699	Paraadise VGA Plus Card (800 x 600) $279
Seagate ST-251 42 MB (38ms) $379	1.2 MB Floppy Disk Drive $109	Vega VGA Card (800 x 600) $279
Seagate ST-251-1 42 MB (28ms) $399	360 KB Floppy Disk Drive $89	Everex VGA Card (800 x 600) $249
Fujitsu ESDI 147 MB (23ms) $1399	1.44 MB 3.5" Micro Floppy Drive $159	Genoa Hi-Res EGA Card (800 x 600) $199
Maxtor ESDI 320 MB (16ms) $3499	720 K 3.5" Micro Floppy Drive $119	ATI Professional Image Board $799



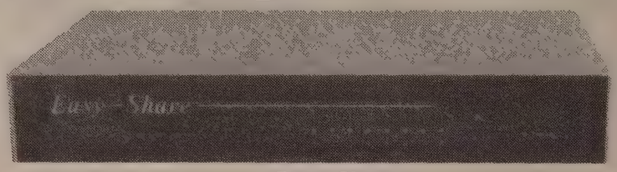
MS ENGINEERING, INC.

10601 S. De Anza Blvd., Suite 213
Cupertino, CA 95014

(408) 257-4249

Prices subject to change without prior notice.
Sale prices apply to C.O.D. only.

It's Easy To Share

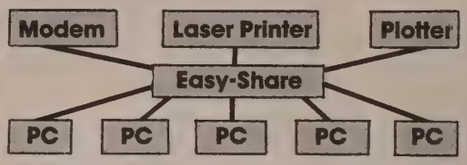


2 Year Warranty

Easy-Share
The Peripheral Sharing Solution

Now you can quickly and easily share your printers, plotters and modems with your computers. Easy-Share automatically buffers and routes your data to the desired output device, eliminating cable or diskette swapping and manual switchboxes.

Easy-Share doesn't require any special software to operate. It easily connects to your computer's serial or parallel ports and is compatible with all of your application software.



• Share up to 8 PCs and peripherals with Easy-Share

Easy-Share Gives You:

Easy Configuration
You can configure each port as "input" or "output"–allowing you to connect 7 computers to 1 printer, 6 computers to 2 printers, or any combination of up to 8 ports. And each port can be configured independently for Parity, Wordlength, Baud Rate, Input/Output operation as well as for "handshake" method (DTR/XON).

Easy Operation
Easy-Share automatically transfers data and performs any required switching. There are NO OPERATOR CONTROLS or switches to set. And, any or all "on-line" users can send documents at the same time. Buffer space is automatically allocated to insure maximum efficiency.

Easy Expansion
Easy-Share has 4 serial ports standard, and is expandable up to 8 ports. Plug-in interface cards allow for serial or parallel expansion. Plus, Easy-Share comes standard with 256K of RAM and is expandable to 1 megabyte of internal onboard RAM!

PLUS THESE OTHER FEATURES, FREE!

Bi-Directional Mode
Easy-Share supports a special bi-directional mode allowing the use of Modems, Plotters, or even the exchange of files between computers (requires user provided file exchange program).

Advanced Software Command Support
Easy-Share supports advanced software commands, including: Number Of Copies, Pause For Paper Change, Printer Select, Bi-Directional Modem Support, No Timeout (for Accounting Audit Trail Use), and others.

CALL TODAY AND SEE why Fortune 1,000 companies all over California have made Easy-Share their peripheral sharing solution.

FIND OUT HOW EASY (and inexpensive) it can be to share your peripherals in your own company with Easy-Share!

CALL NOW
(408) 748-9330

TANSTAAFL Manufacturing, Inc.
1800 Wyatt Drive, Suite 6
Santa Clara, CA 95054
(408) 748-9330

SAVE UP TO 60%

COMPUTERS ■ PRINTERS ■ PERIPHERALS

Macintosh 512K
$699
90 Day Warranty

Included
FREE
With Purchase
MacWrite/Macpaint
Software & Manuals

icb INTERSTATE COMPUTER BANK

APPLE ■ IBM ■ COMPAQ ■ INTERSTATE COMPUTER BANK

BUY SELL
To Buy (415) 968-9818
To Sell (415) 968-USED

WE PAY CASH FOR MOST MAJOR BRANDS OF SYSTEMS & PERIPHERALS

they currently use the Amiga and plan to use the Mac II. His observation that we didn't mention "genlocking" and "trash mattes" is correct, but specious. We didn't feel that these subjects could be adequately covered in this small article whose main purpose was to introduce the concept of Desktop Video. It was not intended as an applications piece.

As to his comments about the Mac II, Targa boards and Betacam, we didn't claim that the Mac II outputs NTSC video; there are RGB-to-NTSC encoders that can give it NTSC capability for well under the $7,000 figure Ryerson quotes. Regarding Richard Lewis' quote in our article about the cost of IBM systems and the Targa board, if Lewis only needed one system, cost would not have been a problem. But on *Max Headroom*, he needed to run multiple systems, and the cost of a half dozen IBM systems outfitted with Targa boards and graphics software was well beyond his budget constraints. This prompted him to use the low cost Amiga instead. "3/4" Betacam" was indeed a misprint; it should have read "3/4", Betacam."

In the midst of Ryerson's flurry of objections, one thing becomes clear. He has missed the point of who the article is written for. If this was an article intended for video professionals, we would have skipped the preliminaries and delved into the technical details that Ryerson focuses on. But this article was written for computer users who are new to video. Its main point was that high quality, low cost video tools are now available to personal computer users. If Mr. Ryerson would like to correspond with us, we would gladly share his insights and observations with *MicroTimes* readers in upcoming articles.

A Final Note: If Mr. Ryerson had read more carefully, he would know that Ben is the one with no greater knowledge of the English language than what it takes to phone for pizza; Jean is a trained journalist.

WRITE A LETTER, GET A T-SHIRT

***MicroTimes* wants to hear from you!**

Send us a letter to the editor, discussing the contents of our magazine, products and services of interest to you, important issues, etc. If we print it, we'll send you a *MicroTimes* t-shirt.

Letters should be directed to Letters, *MicroTimes*, 5951 Canning Street, Oakland, CA 94609. Please include your name and mailing address. Supplies of t-shirts are limited, so we can't guarantee the availability of your t-shirt size, but please include that information so we can try to accommodate you.

PC Plus Consulting Presents:

Only $2.99 Per Disk

FREEWARE

Only $2.99 Per Disk

Public Domain and User-Supported Software for IBM™ and Compatibles
Programs and Utilities to meet all your computing needs.

ADULTS ONLY

❒ **ADULTS ONLY/1 (147)** -German porno. great animated graphics. CGA req.
❒ **STRIP POKER (148)** - Pick your female opponent & watch out. CGA required.
❒ **X-RATED PRINTMASTER (149)** - X-Rated graphics for Printmaster Plus.
❒ **X-RATED PRINTSHOP (150)** - X-Rated graphics for Printshop.
❒ **BAD-BAD (289)** - Naughty adventure game. CGA required.
❒ **ASTRO-[bleep] (297)** - Dirty arcade game. CGA required.
❒ **NASTY GIRL (435)** - The name says it all... CGA required.
❒ **MAXINE (497)** - Must see to believe.... CGA required. EGA suggested.
❒ **X-RATED COLOR SHOW (496)** - Some lovely ladies. CGA required. EGA better.

BUSINESS

❒ **EZ-FORMS Rev. C.24 (66)** - Menu driven forms generator. misc. skeleton forms.
❒ **EASY PROJECT V1.2 (440)** - Complete project management system. Excellent.
❒ **REAL ESTATE ANALYST (83)** - Menu driven. mortgages. interest. etc.
❒ **CK - CHECKBOOK V3.1 (79)** - Full featured checkbook program with reports.
❒ **BIDS 'N QUOTES V0.9 (463)** - Prepares cost estimates & proposals. Does labor. material. sub-contractor costs. etc.
❒ **BUSINESS LETTERS (303 & 304)** - (2 disk set) 650 business letters to fit all your needs. Edit w/ any word processor.
❒ **MR. BILL V3.2 (311 & 312)** - (2 disk set) Time & billing package: costs. credits. reports. audit trail. etc.
❒ **PC-PAYROLL V2.3 (464)** - Menu driven payroll system: 100 employees or less.
❒ **RENTAL PROPERTY (318)** - Keeps track of rental activity. Menu driven.
❒ **SLICWORKS (321)** - Framework clone. Integrated database. spreadsheet. word processor. & communications.
❒ **PARTS INVENTORY CONTROL (479)** - Tracks inventory of a parts & service business: qty. ordered. supplier. etc.
❒ **DOCKETMINDER V1.2 (448)** - Maintain docket for lawyer or law firm.
❒ **FINANCE MANAGER V4.0 (77)** - Accounting package for business or personal finances. Double entry system.
❒ **SOAR V1.92 (449 & 450)** - (2 disk set) Accounts receivable program. Handles a variety of services or products.

COMMUNICATIONS

❒ **RBBS BULLETIN BOARD V15.1 (290 - 292)** - (3 disk set) Turn your computer into a RBBS. Industry standard.
❒ **QMODEM V3.1 (293 & 294)** - (2 disk set) Full featured modem program. 200 number dialing directory. etc.
❒ **PROCOMM V2.42 (53 & 54)** (2 disk set) Menu driven modem program. excellent documentation: still one of the best.
❒ **BOYAN VD3 - (467)** - Modem program that has received great reviews by all.

DATABASE

❒ **FILE EXPRESS V4.01 (33 & 34)** - (2 disk set) Menu driven. easy to use database for beginners to experienced.
❒ **WAMPUM V3.1B (37 & 38)** - (2 disk set) Menu driven dBase III clone. supports functions of dBase. Knowledge of dBase suggested. Latest update.
❒ **PC-FILE + V2.0 (493 - 495)**- (3 disk set) Full-featured database: help screens. menus. macros. One of the best.
❒ **DBASE III UTILITIES (349)** - Contains utilities for household inventory. C language & Desktop. etc. dBase III req.
❒ **dGENERATE V1.0 (511)** - Screen & source code generator by Tom Rettig. dBase III required.

EDUCATION

❒ **COMPOSER (3)** - Create. save. edit. play. & print your music. Nice...
❒ **LETTERFALL V1.1 (119)** - Improve your touch typing skills: 16 levels.
❒ **BEGINNING SPANISH (121)** - Teaches vocabulary. phrases. etc. Basic required.
❒ **THE WORLD 3D (127)** - Display maps of the world. CGA required.
❒ **FUNNELS & BUCKETS V 2.0 (130)** - Great learning game: add. subtract. multiply. & divide. Ages 5 - 10.
❒ **ERYN'S ABC'S (131)** - Teaches alphabet & numbers. Computerized Etch-a-Sketch. Ages 2 - 6. Basic required.
❒ **MATH-WHIZ (188)** - Teaches various math operations. Ages 5 and up. You choose the level. Basic required.
❒ **AMY'S FIRST PRIMER (133)**- Alphabet. numbers. counting. shapes. matching. etc. Ages 4 - 8. CGA & Basic req.
❒ **SAN MATEO EDUCATION (136)** - Teaches math. chemistry & geography. Ages 8 - 16. CGA required.
❒ **SPELLING BEE (138)** - Grades 1 - 12. CGA & Basic required.
❒ **POLYGLOT V6.01 (139)** - Vocabulary builder. Grades 7 - college. Excellent.
❒ **ANIMAL MATH/MOSAIC (181)** - Count objects & graphic learning tool. Ages 4 & up . CGA required.

EGA PROGRAMS

❒ **EGA RISK (216)** - The game of world domination. Also contains EGA Roids.
❒ **EGA UTILITIES/1 (260)** - EGA demos. change fonts & size of letters. etc.

GAMES

❒ **SLEUTH V4.1 (89)** - Murder mystery game similar to the board game "CLUE".
❒ **BLACKJACK (95)** - Advanced blackjack game with tutor. multiple players. Best one yet. CGA or Hercules.
❒ **MONOPOLY V6.7 (106)** - Just like the board game. 2 to 4 players. CGA req.
❒ **DUNGEONS & DRAGONS V1.1 (205)** The Classic Game. Can you survive?
❒ **LAS VEGAS (116)** - Craps. Roullete. Poker. & more. CGA req., Basic on some.
❒ **3D CHESS V1.01 (215)** - Excellent chess game. Switch between 2D & 3D.
❒ **SAM SPADE V1.0A (226)** - Great detective game. Mazegame: creates mazes.
❒ **SOLITAIRE (211)** - 4 different games. Nice graphics. CGA required.
❒ **SUPER PINBALL (212)** - 5 different games. CGA required.
❒ **WORDPLAY (367)** - Wheel of Fortune clone. You provide the prizes. CGA req.
❒ **HANGMAN (91)** - 2 versions of the ever popular game & learning tool.
❒ **DIGITAL LEAGUE BASEBALL (344)** - Pick your team & players. Nice graphics.
❒ **MINIATURE GOLF (505)** - 18 hole golf course with graphics.

GRAPHICS

❒ **PC-ART V1.0 (199)** - Paint program. easy to use. CGA required.
❒ **LIGHTING PRESS (266)** - Printmaster Plus clone. flyers. greeting cards. etc.
❒ **CALENDAR CREATOR (350)** - Create & print your own monthly calendar.
❒ **PRINTMASTER GRAPHICS (319)** - 3 libraries of graphics for Printmaster Plus. Requires Printmaster Plus.
❒ **PRINTSHOP GRAPHICS (320)** - 3 more libraries of graphics for Printshop. Requires Printshop.
❒ **STREETS ON A DISK (437) - DEMO** Program. Map of LA county & various points of interest. CGA or EGA required.
❒ **CAD CURVE DIGITIZER (339 & 340)** - (2 disk set) Excellent all purpose CAD program. Requires CGA or EGA. **Order Disk #'s 351 & 352 for Hercules Mono.**
❒ **DANCAD 3D V2.0B (424 & 425)** - (2 disk set) Advanced 2D/3D drafting program. Stereoscopic 3D wire frame animation. EGA. CGA. Hercules. 640k req.
❒ **EGA TROPICAL FISH (427)** - An aquarium on your computer screen. EGA required. Also contains CGA fish program.

LANGUAGE

❒ **TURBO "C" TUTOR (489 & 490)** - (2 disk set) 14 lesson tutorial ; learn to program in "C" language.
❒ **"C" LANGUAGE V2.1 (299 & 300)** - (2 disk set) Complete programming environment. Source. compiler. samples.
❒ **WINDOW BOSS (322)** - State-of-the-art screen handling techniques for "C" language. Pop-up windows. menus. etc.
❒ **TURBO PASCAL TUTOR (20)** - 17 lesson tutorial with samples. etc.

MISCELLANEOUS

❒ **STRESS & SHRINK (74)** - Stress - stress test. Shrink - personality analysis.
❒ **HORSERACING (343)** - Handicapping for thoroughbreds.
❒ **FAMILY TIES V1.15 (154)** - A genealogy program for the amateur or pro.
❒ **ASTROLOGY V9.5 (284)** - Read your own chart from stars. moon. etc.
❒ **LOTTO # GENERATOR (159)** - Advanced techniques to win big $$$.
❒ **FREEWILL V1.0 (171)** - Valid WILLS for California. Easy to fill in.
❒ **FASTBUCKS (191)** - Menu-driven home finance package. Easy to use.
❒ **BIORHYTHM (194)** - Calculate & print your own monthly charts.
❒ **TENANTS RIGHTS (196)** - The 'Bible' for California renters. **A MUST.**
❒ **MEALMATE (332)** - Nutritional database for meal planning.
❒ **HEALTH RISK (331)** - Diagnose your own ailments.
❒ **AIRPLANES (398)** - Print paper airplanes. fold-em and let 'em fly. Basic req.
❒ **RECIPES V1.0 (445)** - Over 125 recipes. adjust serving sizes from 1-99.
❒ **LITTLE BLACK BOOK (441)** - Creates pocket sized address book. Prints mini-alphabetized pages.
❒ **TIMESAVER (442)** - Create daily/monthly calendar of appointments.

PRINTER UTILITIES

❒ **LQ V2.1 (509)** - Produces high quality text on dot matrix printers. Multiple fonts with print spooler.
❒ **LASERJET FONTS/I (327)** - 30 + downloadable fonts for Laserjet Plus/II.
❒ **LASERJET FONTS / II (471 & 472)** - (2 disk set) More downloadable fonts for HP Laserjet Plus/II. Helvetica. Script. etc.
❒ **LASERJET FONTS/UTILITIES (328)** - Contains 'Pamphlet' (sideways printing) & misc. other utilities & fonts.
❒ **PRINTPRO V1.2 (468)** - Change printer operation from within ANY application at ANY time.

SPREADSHEET

❒ **PC CALC V3.0 (27)** - Complete Spreadsheet program. Buttonware.
❒ **LOTUS 123 PROGRAMS (28 - 32)** -(5 disk set) Contains as many applications and utilities that we could find. Requires Lotus 123 program.
❒ **LOTUS 123 TUTOR (177)** - Beginning tutorial for Lotus 123. Various worksheets. Requires Lotus 123.
❒ **AS EASY AS V3.0 (302)** - Lotus clone. 52 column sheet. graphing. supports functions of 123. "WKS" files. etc.

UTILITIES

❒ **DISK COMMANDO V2.0 (218 & 219)** - (2 disk set) Norton Advanced Utilities clone. Too many features to list.
❒ **SIM-CGA (220)** - Great for most programs that need color (CGA) to run.
❒ **DOS HELP (255)** - Help screen for DOS commands. functions & batch files at your fingertips. For DOS 3.XX.
❒ **DOS TUTORIAL V4.2 (256)** - Menu driven tutorial that teaches DOS commands. terms. & functions. A MUST.
❒ **BEGINNERS (257)** - The basics of using most public domain software.
❒ **LIST V6.2A (274)** - Best utility for viewing documentation or any ASCII file.
❒ **PC MAGAZINE (277)** - Over 30 great utilities. rated by PC magazine.
❒ **DESKMATES V1.01 (278)** - Sidekick like utility plus more features.
❒ **AUTOMENU V4.01 (280)** - Access programs. batch files. DOS commands. etc. Best shareware menu program.
❒ **STILL RIVER SHELL V2.36 (369)** - Excellent directory & file management utility.
❒ **FLASHBAK V1.56 (217)** - Menu driven hard drive backup system.
❒ **BATCH TUTOR (223)** - Make your computing easier & foolproof.

WORD PROCESSING

❒ **SIDEWRITER (6)** - "Sideways" printing: great for spreadsheets.
❒ **RELIANCE MAILING LIST V2.0 (161)** - Easy to use. menu-driven. labels. mail-merge. etc. 32.000 names maximum.
❒ **PC-WRITE V2.71 (9 & 10)** - (2 disk set) Full featured word processor: all the features of the expensive one's.
❒ **LETTERHEAD (69)** - Create and print your own letterhead on letters and envelopes. IBM/Epson comp. printer req.
❒ **GALAXY V2.3 (11)** - Easy to use word processor: menus & quick keyboard commands. Lots of features.
❒ **PC TYPE + (373 - 375)** - (3 disk set) A powerful word processor with full screen editing. mail merge. 100.000 word dictionary. on-screen help. etc. Buttonware.

ORDER FORM

Please print disk numbers

___ ___ ___ ___ ___ ___

___ ___ ___ ___ ___ ___

___ ___ ___ ___ ___ ___

NAME_____

ADDRESS_____

_____

CITY_____ST___ZIP_____

PHONE (_____)_____

Minimum order 3 disks.
Buy 10 disks get eleventh *FREE*
Buy 20 get 2 *FREE*

# of disks____@ $2.99 = _____

Calif. Sales Tax (6.5%) = _____

Shipping & Handling= ___3.00

TOTAL = $ ========

Mail order form & check or money order to:

PC Plus Consulting
1466 Springline Drive
Palmdale, CA 93550

(805) 273-0300

Call or write for free catalog.
Hours: M-Sat, 9 am - 5 pm.
3.5" media - $3.99 ea.
Sorry, no VISA, MC or COD's.
MTN 5/88

TATUNG

Chameleon-like clone or powerful dragon?

This is our new TCS 8000™ business/professional computer system. It is not just another Chameleon-like clone. We designed it to harness advanced 80386 microprocessor technology. And so it is remarkably powerful, extremely fast and extraordinarily versatile. It gives you all the strength of the MS-DOS,™ Concurrent DOS 386,™ and PC MOS 386™ operating systems. And when OS/2™ is available, it will enable your customers to maximize the potential of that operating system.

The Omniscan monitor...the high resolution monitor compatible with virtually all computers, software and graphics. From VGA™ to EGA; from Personal System/2™ to Macintosh II.™

Quality—others promise, we deliver. The fact that we've already delivered over 3,000,000 color monitors is the best proof.

TCS 8000
16 MHz, 0 wait-state
32 bit, expandable 16MB
TCS 7000
6, 8, 10, 12 MHz
TCS 4000 (Slim AT)
6/10 MHz
Equivalent of 5 expansion slots

TATUNG SCIENCE & TECH., INC.
2060 RINGWOOD AVE.
SAN JOSE, CA 95131

CALL NOW
408-435-0140

386 Dream Machine!

Design Your Own

Featuring: Mylex, Micronics, Mini Micro, Everex

QMS 810 Laser Printer. Call for Best Price!

We will help you ***design and configure*** your ultimate "Dream Machine" with motherboards and components from the industry's leaders. ***Guaranteed lowest prices in the Bay Area!*** Call today for details.

Leases Available for New Businesses!

MILLENIUM COMMUNICATIONS
critical design intelligence
3030 BRIDGEWAY
SAUSALITO, CA 94965
415 332 8141
TELEX: 697 2836
FAX: 415 332 4003

CALENDAR OF EVENTS

SPONSORED BY SMART AND FRIENDLY

July 7 Time Line Workshop. San Francisco. Contact Sherri Davis, Symantec-Breakthrough Software, (415) 898-1919.

July 9 Computer Swap Meet. San Mateo County Fairgrounds. RK Productions. (800) 252-7927.

July 10 – 30 Future Fiction HyperCard Fiction Workshop CSU Summer Arts Course. Call (213) 590-5768 for information.

July 11 – 12 Advanced Programming Techniques With dBASE III Plus Seminar. San Francisco. Data-Tech Institute. Call Jim Genovese, (201) 478-5400.

July 11-13 Fault Tolerant Computing Seminar. Techmart, Santa Clara. UC Santa Cruz. Call Karin Poklen, (408) 429-4535.

July 11 – 12 Computer Assisted Software Engineering. San Francisco. Association for Systems Management. Call Bernie Thiel, (216) 243-6900 for information.

July 13 – 16 Relational Databases: Design, Tools & Techniques Course. San Francisco. Integrated Computer Systems. Call John Valenti, 1-800-421-8166.

July 13 – 15 Expert Systems And Artificial Neural Systems: Technology, Prototyping, Development And Deployment In The Corporate Environment Seminar. Techmart, Santa Clara. UC Extension. Call Karin Poklen, (408) 429-4535.

July 13 – 15 C: A Guided Tour Intensive Three Day Seminar. Handlery Hotel, Union Square, San Francisco. Miller Freeman Publications. Contact Bill Rutledge (415) 397-1881.

July 15 Time Line Workshop (Transition to Version 3.0). San Francisco. Contact Sherri Davis, Symantec-Breakthrough Software, (415) 898-1919.

July 15 Computer Graphics Showcase Opening Gala. San Francisco. Suite 3D. Call Rachel Carpenter at (415) 882-7063.

July 16 Computer Show. Luther Burbank Auditorium, Santa Rosa. East West Computer Shows. Call (415) 388-8893.

July 16 Seminar: Mac Graphics In Journalism. San Francisco. Suite 3D. Call (415) 882-7063.

July 16 Techniques of Presentation Design Course. Computer Arts Inst. 310 Townsend St., San Francisco. Call CAI at (415) 546-5242 for registration.

continued

Smart and *Friendly*

Attention Advertisers

The Competition Has Been Telling You Stories. Now It's Time for the Facts.

Consumer Audit BPA

Recently, Computer Currents magazine printed an ad about their circulation which was deceitful and misleading. They claimed a circulation figure of 126,748 which is not supported by BPA, the independent auditing firm used by both MicroTimes and Computer Currents. They claimed to have the larger circulation, yet MicroTimes' audited circulation is greater than either their audited circulation or their unsubstantiated claims.

BPA is the most respected auditing firm for business publications in America. The numbers are a matter of record: MicroTimes with a BPA Audited Circulation of Qualified Recipients at 132,439; Computer Currents with a BPA Audited Circulation of Qualified Recipients at only 59,505. This number is also confirmed by Computer Currents' publisher's statement in SRDS (Standard Rate and Data Service), Business Publications, Classification 5A, May 24, 1988.

Computer Currents claims to have a circulation of "126,748 Computer Users & Buyers." However, this claim is not supported by their BPA audit; BPA does not qualify "buyers." Also, they claim a circulation of 62,000 in Southern California and 64,748 in Northern California. The Southern California circulation is unsubstantiated by BPA; the Northern California circulation is BPA qualified at exactly 59,505.

All of Computer Currents' audited circulation claims stated in their recent ad are false and do not appear on any BPA audit statement for their magazine. You can verify this for yourself by asking for a copy of their audit. The irony here is that even if we were to accept their unsubstantiated claims and compare them to MicroTimes' BPA Audited Circulation, **MicroTimes has a larger circulation than Computer Currents.**

While we do not enjoy writing and publishing a report of this nature, we believe that the deceitful ad published by Computer Currents demands a direct, clear and factual response so that you know the truth.

Computer Currents claims that "Nobody Has a Bigger Circulation In California Than Computer Currents." You be the judge.

- MicroTimes BPA Audited Avg. Qualified Circulation **132,439**
  Computer Currents BPA Audited Avg. Qualified Circulation **59,505**
- MicroTimes BPA Audited November 1987 Sample Issue, Qualified **136,478**
  Computer Currents BPA Audited November 1987 Sample Issue, Qualified **57,841**
- MicroTimes BPA Audited November 1987 Sample—Northern California, Qualified **79,102**
  Computer Currents BPA Audited November 1987 Sample—Northern California, Qualified **57,841**
- MicroTimes BPA Audited November 1987 Sample—Southern California, Qualified **57,376**
  Computer Currents BPA Audited November 1987 Sample—Southern California, Quailfied **Not Audited**

When you want to hear a good story, call the competition. When you want the facts about advertising in regional computer magazines, call MicroTimes. (415) 652-3810.

MicroTimes is California's undisputed circulation leader of regional computing magazines.

MICROTIMES™

BAY AREA OFFICE
5951 Canning Street
Oakland, CA 94609
(415) 652-3810

LOS ANGELES OFFICE
1800 N. Highland, Suite #220
Hollywood, CA 90028
(213) 467-7878

SAN JOSE OFFICE
36 Harold Avenue, Suite 8
San Jose, CA 95117
(408) 244-4400

ORANGE COUNTY OFFICE
800 S. Brookhurst, Suite 1F
Anaheim, CA 92804
(714) 776-2900

Source: 1) BPA Publisher's Statements for both magazines, 6 month period ending December 1987 2) Computer Currents advertisement June 28, 1988, pg 26 3) SRDS (Standard Rate and Data Service), May 24, 1988, Business Publications, Classification 5A 4) SRDS (Standard Rate and Data Service), May 27, 1988, Consumer Magazines, Classification 10A

Belmont Computer Products

Turbo 8088-8MHz System $369

- 4.77/8 MHz Switchable
- 256K on 640K Board
- 360K Floppy Drive w/Controller
- 84 Key Keyboard
- 150W Power Supply
- Mono Graphic Card w/Printer Port
- 1 Yr Limited Warranty

10 MHz System $389

286-10MHz 0 Wait System $789

- 6/10 MHz 0 Wait
- 512K RAM on 1 MB Motherboard
- Real Time Clock, Calendar
- 1.2 MB Floppy Drive w/Controller
- 220W Power Supply
- 84 Key Keyboard
- Mono Graphic w/Printer Port
- Western Digital FD/HD Controller
- 1 Yr Limited Warranty

12 MHz 0 Wait System $899

16 MHz 0 Wait System $999

386 20 MHz 0 Wait EGA System $1999

- 1 MB RAM on 2 MB Motherboard
- Landmark=27 MHz
- EGA 640x480 on Board
- Western Digital FD/HD Controller
- 1.2 MB Floppy Drive
- 80287 & 80387 Socket
- 2 parallel & 2 Serial on Board
- Enhanced Keyboard

Motherboard

DTK 8088 8MHz. $70
DTK 8088 10MHz. 75
DTK Baby 286 6/10MHz 0 Wait 245
DTK 286 6/10MHz 0 Wait.245
286 6/12Mhz 0 Wait. . . .289
286 6/16Mhz 0 Wait. . . .399

Interface Card

Mono Graphic Card. . . . $45
Color Graphic Card 40
Multi I/O 48
Floppy Controller 360K/1.2 MB 20/40
Everex EGA 640x480. . . .115
Everex 800x600 145
Everex VGA 239
Paradise 640x480 Autoswitch 160
Genoa Super-Hi 800x600 179
AT Multi I/O 40
WA2 FD/HD Controller. . .109
DTC 5287 RLL FD/HD Controller 139

Modem

Everex 1200 Baud. $65
Everex 2400 Baud 135

Floppy Drive

Fujitsu 360K/1.2M . . $65/83
Teac 360K/1.2M. 73/86
Teac/Toshiba 3.5" 720K . .79
Teac/Toshiba 3.5" 1.44MB105

Keyboard

Mitsmi 5060 84 Key $37
BTC 5339 Enhanced. 47
Keytronic Enhanced 47

Misc.

150/200W P.S. $39/59
LogiMouse C7/Bus. 65
Logi Paint/CAD 15/30
Case 28/55

Hard Disk

Seagate-225 Kit $255
Drive Only 205
ST-238 Kit (30M) 285
ST-251 (40M 39MS) 340
ST251-1 (40M 28MS). . . .395
ST 4053 (43M 28MS). . .450
ST-277R (60M 39MS) . . .450
ST-4096 (80M 28MS). . .599

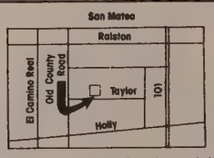
Monitor

Samsung Mono $67
Samsung Color 215
Samsung EGA 320
Casper Mono 70
NEC Multisync II 560
NEC Multisync GS 200
Nanao 8060S 520

Printer

Epson LX800 . . . . . $195
Epson LQ500 349
Star NX1000 179
Citizen 120D 145
Citizen 180D 159
Citizen MSP-45 399
Ricoh 3200Q 199
(Daisywheel, 132 column, 22 cps)

Belmont Computer Products
1775 Old County Rd. #21
Belmont, CA 94002 Hours: M-F 9-7
(415) 598-9058

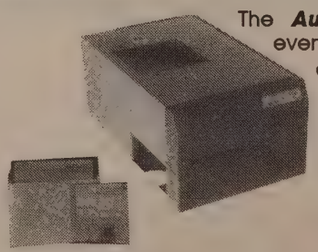


PC, XT & AT ARE REGISTERED TRADEMARKS OF INTERNATIONAL BUSINESS MACHINES, INC. ● UPS Shipping Daily ● Dealer Inquiries Welcome ● Co. Purchase Welcome

Copy Disks Automatically!

***AutoCopy* automatically:**

- **Duplicates** floppy disks
- **Backs up** your hard disk
- **Restores** your hard disk
- **Formats** disks
- **Checks** disks
- **Installs** software
- **Automates** your own disk handling needs



The ***AutoCopy*** package includes everything you need to quickly and automatically copy floppy disks and more! With special pre-formatting, disks can be copied in only 26 seconds. Aren't you tired of copying disks by hand? You'll be surprised how quickly AutoCopy will pay for itself!

Copies in 26 seconds!

Order today!
(415) 846-2860

$2195 Complete

Best Of Times, Direct Sales 1989-A Santa Rita Rd, Suite #111 Pleasanton, CA 94566

Calendar Of Events *continued*

July 18 Data Base Jamboree. dBase IV demo and presentation. San Francisco. San Francisco PC Users Group. Call (415) 621-2609 for details.

July 18 How To Train And Orient Employees Seminar. Holiday Inn Holidome, Sacramento. Keye Productivity Center. Call 1-800-821-3919 for registration information.

July 19 How To Train And Orient Employees Seminar. Stockton Inn Best Western, Stockton. Keye Productivity Center. Call 1-800-821-3919 for registration information.

July 20 How To Train And Orient Employees Seminar. Sainte Claire Hilton, San Jose. Keye Productivity Center. Call 1-800-821-3919 for registration information.

July 21 Reasons Why Object Oriented Programming, Groupware And Test Management Will Be The Hot Areas of 1989 And Beyond-SEF Monthly Meeting. Palo Alto. Software Entrepreneurs' Forum. Call Barbara Cass, (415) 854-7219.

July 23 Computer Show. Santa Clara Convention Center. East West Computer Shows. Call (415) 388-8893.

July 23 Santa Clara Computer Show & Sale. East West Computer Shows, Inc. Call (415) 388-8893.

July 23 – 24 Time Line Workshop (Version 3.0). San Francisco. Contact Sherri Davis, Symantec-Breakthrough Software, (415) 898-1919.

July 25 How To Train And Orient Employees Seminar. Hyatt at Oakland International Airport. Keye Productivity Center. Call 1-800-821-3919 for registration information.

July 25 – 27 Upgrade, Repair, Maintenance, Troubleshooting Of The IBM PC, XT, AT, PS/2 & Compatibles San Jose. Personal Computer Group. Call (201) 377-7400 for registration.

July 26 How To Train And Orient Employees Seminar. Hyatt Palo Alto. Keye Productivity Center. Call 1-800-821-3919 for registration information.

July 26 SBT Introduction to dBASE IV Seminar. San Francisco. Contact SBT Corporation (415) 331-9900.

July 25 – 26 Four Short Courses On Systems Development: A PC Based Methodology. Sacramento. Contact TCA Training Institute at (408) 737-2665.

July 26 – 27 T1/T3 Networking Course. San Francisco. Data Tech Institute. Call (201) 478-5400.

July 27 How To Train And Orient Employees Seminar. Mark Hopkins Inter-Continental, San Francisco. Keye Productivity Center. Call 1-800-821-3919 for registration information.

July 27 SBT Introduction to dBASE IV Seminar. San Jose. Contact SBT Corporation (415) 331-9900.

July 28 How To Train And Orient Employees

continued

CrystalPrint™

The Smallest, Most Personal Page Printer Has a New First Name

More Personal than Ever

Small. Lightweight. Fast. Quiet. As convenient and affordable as a personal computer. That's the CrystalPrint personal page printer. Now there's another reason to own one. As a result of the consolidation with Data Technology, it's available from Qume — one of the first and most respected names in the printer industry.

Personal Size

Qume CrystalPrint page printers require 50% less space than the leading laser printers. And they weigh 30% less. That means they can be desktop close, even when space is precious.

HP LaserJet Series II footprint

Personal Productivity

Qume CrystalPrint Series II™ and CrystalPrint WP™ page printers put six pages within arm's reach in a minute. There's no waiting. No ear-shattering noise. No traipsing around the office to a shared printer. Even the paper tray is conveniently front-loading to make you more efficient.

Qume®

Professional Performance

Qume CrystalPrint Series II gives you full HP LaserJet Series II™ emulation and fonts. CrystalPrint WP comes with Qume/Diablo emulation. HP or Epson emulation for presentation graphics and desktop publishing is optional. Other emulation and font cartridges are available for both models. And both deliver crisp, clear text and graphics — print quality that rivals the most expensive page printers, but at a much lower cost.

Personal Price

Here's the best part. At $1999* for the Qume CrystalPrint Series II and just $1299* for Qume CrystalPrint WP, page printing is now closer to you than ever before.

Get on a first-name basis with Qume CrystalPrint and let your CrystalPrint dealer show you the most personal page printer since the ballpoint pen.

For the location of the nearest Qume CrystalPrint dealer, call 1-800-223-2479.

Qume

500 Yosemite Drive,
Milpitas, CA 95035

LaserJet Series II, Epson and Diablo are registered trademarks of their respective corporations. *Suggested retail price

©Qume Corporation 1988

386 20 MHz 0 Wait EGA System $2189

- Western Digital FD/HD Controller
- Teac 1.2 MB Floppy Drive
- 80287 & 80387 Socket
- 1 MB Static RAM on board
- Landmark=27 MHz
- EGA 640x480 on board
- 2 Parallel & 2 Serial on Board
- Maxi-Switch 101 Keyboard

TURBO XT COMPLETE MONO SYSTEM

- 4.77/8MHz/256K RAM
- 360K Floppy Drive (Fujitsu)
- Hi-Res MGP
- AT Style Keyboard
- 150W Power Supply
- High Res Mono Monitor
- Floppy Disk Controller (DTK)
- One Year Warranty

$439

10 MHz SYSTEM $459

6/10 MHz 0-WAIT MONO 286 SYSTEM

- 512K RAM Exp. to 1MB on Motherboard
- 1.2 MB Teac Drive
- FD/HD Controller (Western Digital)
- 230 W Power Supply
- Hi-Res MGP
- AT Style Keyboard (K151L Available)
- High Res Mono Monitor
- One Year Warranty

$895

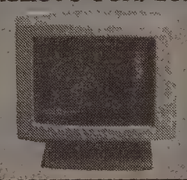
BABY AT SYSTEMS AVAILABLE

6/12 MHz 286 System $975

Monthly Special $45

- NEW Floppy Disk Controller Upgrade PC or XT Machine
- Supports 3½" 1.44MB/720K Drive as A or B Drive
- Supports 5¼" 1.2MB/360K Drive Also

RELISYS CGA/EGA COLOR MONITOR



Model RE5154

- 14-Inch, Non-Glare Display
- TTL Video Input
- High-Resolution, CGA/EGA Color Monitor
- 64 Display Colors
- 15-Month Warranty on Labor, 24 Months on Parts
- Tilt/Swivel Base

$339

ADD ON BOARDS

Monochrome graphics/Printer Port	$45
Color graphic card/printer port	45
Everex micro enhancer EGA	123
Everex VGA Board	249
Everex Super EGA (800x600)	145
XT floppy controller (DTK)	22
1.2/360 Floppy Controller	39
RS-232 card	25
AT-I/O card (S/P/G) (DTK)	45
Multi I/O card (FDD/S/P/G/Clock)	55
Printer card (DTK)	20
Hard disk controller + cable	65
WD FD/HD Dual Controller	115
DTC RLL Contrlr AT	159
FD/HDD Controller for XT	95
AT Everex 3 MB RAM Card	84
XT 2 MB RAM card	69
Memo-576 card (upgrade XT memory)	35

MONITORS

Nanao 8060S (800x600)	$519
Caspar Mono Swivel	69
Quimax DM-14	125
Samsung Color	235
Relisys 5154	349
NEC Multi-Sync	569
14" Paper White	119

KEYBOARDS

Keytronic 101	$49
K151L (AT Style)	40
BTC 5339 enhanced	49
MCK-101 (Click Sound)	55
Maxi-Switch 84/101 Key	57/69

DISK DRIVES

Fujitsu 360K/1.2 MB	$69/83
Teac 360K/1.2 MB	75/89
Teac 3.5" Drive (720KB)	85
Teac 3.5" (1.44 MB)	109
20MB ST-225 Kit	255
30MB ST-238 Kit	285
ST-225	208
ST-238	235
ST-251 (38ms)	349
ST-251-1 (28ms)	419
ST-4096 (28ms)	629

PRINTERS

Citizen 120D	$150

MAIN BOARDS

386 20MHz w/1MB/2S/2P/EGA	$1850
4.77/8 MHz Turbo XT motherboard (OK)	70
10MHz Turbo XT motherboard (OK)	80
Full size 6/10 MHz 0 Wait AT M/B (DTK)	255
Baby AT 6/10 MHz 0 Wait (DTK)	255
Full size 6/12 MHz 0 Wait AT M/B (DTK w/80286-12 CPU)	335

COMPUTER CASE

XT Case	$27
AT Jr. Case/XT	32
Tower Case w/275 PS	275
AT Case	54
Baby AT Case	54
Super Small Footprint Case w/PS	99

MISC.

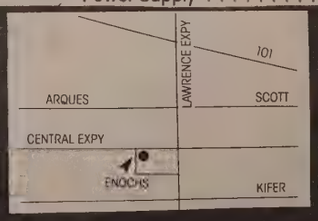
MS DOS 3.3	$85
6' printer cable	$3.50
Keyboard drawer	29
Computer floor stand	14
Power center	19
Printer switch box (AB/ABCD)	20/29
Logic mouse C7/Bus mouse	69/69
Everex modem 1200/2400	69/139
2400 External Modem	189
Keyboard Extension Cable	8
Monitor Extension Cable	8
Power Supply	CALL

AROMA computer systems

3685 Enochs St.
Santa Clara, CA 95051

Tel: (408) 736-4355
FAX: (408) 736-4356

M-F 9-7 Sat 10-4



30 MEGABYTES OF FREEWARE*

GAMES
EDUCATION
SCIENCE

$49.95

BUSINESS
FINANCE
UTILITIES

* DISTRIBUTED ON VIDEO TAPE (VHS ONLY)
REQUIRES A VCR CONTROLLER $199.00
DEMO DISK WITH PROGRAM LISTING $5.00

CODY DISTRIBUTION
(408) 336-8817
CA RESIDENTS ADD APPLICABLE TAX

9666 HIGHWAY 9
BEN LOMOND, CA 950005

Calendar Of Events *continued*

Seminar. Flamingo Resort Hotel, Santa Rosa. Keye Productivity Center. Call 1-800-821-3919 for registration information.

July 30 Bay Area Computer Swap. Cow Palace, San Francisco. Call Microshows, (800) 433-7469.

July 30 Seminar: Macintosh II. San Francisco. Suite 3D. Call (415) 882-7063.

August 1 – 3 Interactive Videodisc Conference. Monterey. CAP International. Call (617) 837-1341.

August 6 Computer Show. San Rafael. East West Computer Shows. Call (415) 388-8893.

August 6 Bay Area Computer Swap. Oakland Convention Center. Call Microshows, (800) 433-7469.

August 9 – 15 1st Computer Olympiad. Thinking games played against computers. Park Lane Hotel, London, England. Send a large stamped, self-addressed envelope to: Computer Olympiad, 11 Loudon Road, London NW8 OLP, England.

August 10 Software Licensing Agreements: Buying, Selling And Protecting Rights Workshop. San Francisco. Data Tech Institute. Call (201) 478-5400.

August 11 – 12 Troubleshooting A Local Area Network Seminar. San Francisco. Data-Tech Institute. Call Jim Genovese, (201) 478-5400.

August 14 Computer Show. Scottish Rite Center, Sacramento. East West Computer Shows. Call (415) 388-8893.

August 15 How To Automate Your Business Accounting Seminar. San Francisco. J.C. Lukrich & Co. Call Pandora, (415) 864-6770.

August 15 – 19 Senior Project Management Meeting. San Francisco. American Management Association. Call Robert Newton, (212) 903-7936.

August 15 – 16 Understanding Data Communications-A Practical Guide. San Francisco. Data Tech Institute. Call Jim Genovese, (201) 478-5400.

August 15 – 17 Impactless Printing Conference. Monterey. CAP International. Call (617) 837-1341.

August 17 – 19 Developing Applications With dBase III Plus Course. San Franicsco. Personal Computer Group. Call (201) 822-1230.

August 19 Time Line Workshop (Transition to Version 3.0). San Francisco. Contact Sherri Davis, Symantec-Breakthrough Software, (415) 898-1919.

August 20 Computer Swap. Santa Clara County Fairgrounds, San Jose. Computer Swap America. (415) 366-9162.

August 21 Computer Show. Solano County Fairgrounds, Vallejo. East West Computer Shows. Call (415) 388-8893.

August 21 – 26 SCO Forum '88 For Developers and Resellers. University of California, Santa Cruz. Santa Cruz Operation, (408) 425-7222.

continued

GRAND OPENING CELEBRATION!
INTRODUCING SILICON VALLEY'S #1 COMPUTER
SUPERSTORE

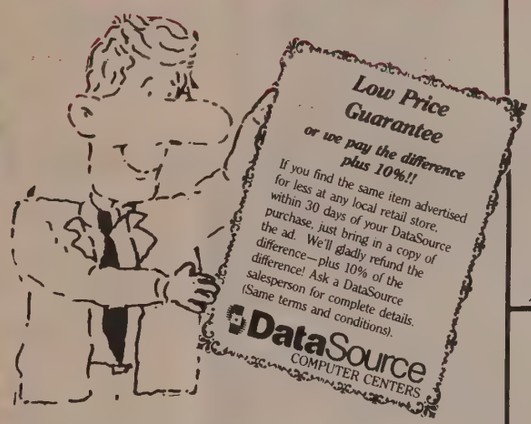
Panasonic Printers
1080i ... $179
1091i ... $209

Juki 6200 30 CPS Daisy Wheel $279
with any CPU purchase

Mouse Sale
3 Button ... $59
PC Mouse ... $99
MS Mouse ... $115

Compaq Deskpro 286/12 MHz $1749
limited quantities

Disk Sale
Generic 5¼ .. 35¢
Verbatim 5¼ . $7.99
Memorex 3½ HD $49.99


Low Price Guarantee
or we pay the difference plus 10%!!
If you find the same item advertised for less at any local retail store within 30 days of your DataSource purchase, just bring in a copy of the ad. We'll gladly refund the difference—plus 10% of the difference! Ask a DataSource salesperson for complete details. (Same terms and conditions).
DataSource COMPUTER CENTERS

NORTHERN CALIFORNIA'S GUARANTEED LOWEST PRICES!

DataSource Computer Centers announces the Grand Opening of Silicon Valley's largest computer SuperStore. Over 16,000 square feet dedicated entirely to microcomputer products, service and classroom training! We're conveniently located at 4090 Stevens Creek, San Jose (just off 280 at Saratoga Ave.)

Huge selection of computer accessories and supplies. In addition to our best-selling line-up of computers, printers, and software you'll find an incredible selection of accessories and supplies—all priced at unbelievably low everyday sale prices. Just call us for a quote, and you'll be amazed!

Visit our " Discount Software Center" for the lowest prices and best selection. For the latest Macintosh productivity software or IBM desktop publishing solutions, visit our new SuperStore software center. From word processors to spreadsheets to utility programs to entertainment software, DataSource has it all.

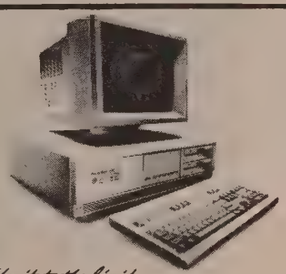
Wide range of payment options and financing. Our multiple payment options include 120 days "same as cash," instant credit to $2500 and net 30 terms for qualified purchase orders. **And don't forget our 110% Low Price Guarantee that assures you of the best value on every product, every day. Only at DataSource!**

Hundreds of Other Products Now On Sale

- 12.5 lb. portable • Removable battery pack
- Supertwist backlit screen, incredible quality
- Largest CRT screen (⅓ larger than competitors)
- Dual 3.5" 720K floppy system, or 20 MB hard drive
- PC/XT compatible
- 80688 processor (1 wait state)

$1699

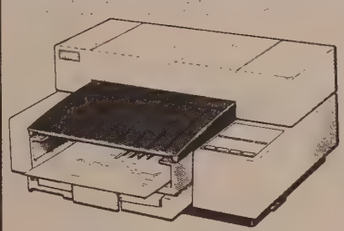
ZENITH data systems SUPERSPORT **Dual Floppy System**



PowerMate™ 386
Complete EGA/40 MB System
- 40 MB hard drive • 2 MB RAM
- EGA monitor and video card
- 32 bit memory bus • Interleaved memory
- Superior graphics and power

$3995
Save over $900

Take it to the limit.
NEC

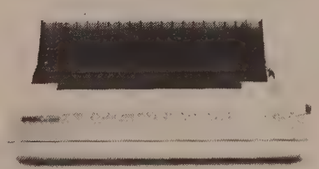


The HP DeskJet Printer
Laser-quality output at a personal printer price! Now only
$779

Also on sale:
- Rugged Writer $1295
- Paint Jet $975
- Scan Jet $1095
- New Mac Scan Jet Interface $395

HEWLETT PACKARD

New Models Just Arrived!



FX850 & FX1050
- Improved paper handling performance
- High-speed 264 CPS
- 54 cps in NLQ
- Replace FX86e and 286e
- Full one year warranty

Special Introductory Offer
$449
Epson FX-850 (save over $150)

EPSON PRINTERS

Business Accounts (408)	Retail Showroom (408)	Service Department (408)	Classroom Training (408)	Free Vendor Seminars (408)	Sacramento Store (916)
241-6900	296-6400	244-8555	296-1006	296-1279	923-0021

DataSource COMPUTER CENTERS

SHOP EVENINGS 'TILL 9 PM!
4090 Stevens Creek Blvd.
San Jose
(at Saratoga Ave./next to Circuit City)

SILICON VALLEY'S #1 COMPUTER SUPERSTORE

Sale ends 7/15/88.
Prices reflected are cash sales only

APPLE COMPATIBLE DISK DRIVES

½ Height Apple Comp $89
Full Height Apple Comp 99
IIc ½ Height Floppy Drive 95
Macintosh 800K 170
Apple IIgs Drive 165

APPLE TYPE PRODUCTS

IIe 80 column w/64K $44
Disk Controller 42
Parallel Interface 40
Graphics Parallel 59
16K RAM Card 34.95
Super Serial Card 69
CPM Card 39
No Slot Clock 39
IIe Extended w/256K . . 119
II, II+ 80 Column 54
IIgs 1 Meg (0K) 42
Maxflyte Yoke II, II+, IIe 89
RF Modulator IIe, II+, IIe 12
System Fan II, IIe, II+ . . 25
Numeric Keypad IIe 29

DISKETTES

DS DD 5¼" Box of 10 . . . . $4.50
High Density Box of 10 13
DS DD 3½" 15.50
10 Pieces
Apple & IBM Joysticks $22
Apple II, II+ Joysticks 15
IBM MKVI Joystick 39

SURGE & SPIKE PROTECTORS

6 Outlet w/Circuit Breaker $9
6 Outlet w/Spike Protector 25
6 Outlet w/Spike Bar 29
2 Outlet w/Wall Mount 29.95
2 Outlet Noise/Spike/Telephone 49

CHIPS

Due to Price War Please Call For Best Prices 16K, 64K, 256K, 1 Meg 2716, 2732, 64, 256, 8087, 8087-2, 80287-6, 80287-8, 80287-10

MOUSE SPECIALS

M-2 Mouse w/Microsoft & PC Mouse Software . . . $64
Genius Mouse w/Driver Software & Dr. Halo III & Mouse Pad 69
Mouse Pads 6
Logitech Bus Mouse 79
ZNIX w/Dr. Halo III 59

IBM COMPATIBLE DRIVES

TEAC 55BV ½ Height 360K $79
Fujitsu ½ Height 360K 75
1.2 Meg AT 90
3½" 720K with 5¼" mounting kit 89
Toshiba 3½" 1.44MB 119
20 Meg w/Controller 269
30 Meg w/Controller 319

IBM TYPE PRODUCTS

Serial Card 34
Multi I/O 52
Hard Drive Controller . . . 65
Hard Drive RLL Controller 75
Monochrome w/Print 49
Maxflyte Yoke 89.95
DOS 3.2/3.3 w/GW BASIC 69/92
Samsung Amber Monitor 80
Floppy Controller $29
XT 1.2MB Floppy Controller 59
Clock Card 34
Clock Card w/Serial Port 44
AT/XT EMS 95
AT I/O 45
No Slot Clock 39

MODEMS & CABLES

IBM 1200 Baud Internal $69
2400 Baud Internal 139
2400 Baud External 139
1200 HC EXTERNAL 79
6' Parallel Cable 8
Serial M-M or M-Female 8
Macintosh Modem Cable 10
IIe to IIC Drive Adapter 10

We Ship Daily • 90 Day Replacement Warranty
DEALER Inquiries Welcome • Minimum $2 Shipping Charge
No Charge Cards Accepted

GUENTHER
COMPUTER PRODUCTS INC.

312 Locust St.
Santa Cruz, CA 95060
New Larger Location To Serve You Better

(408) 458-9404

Please Include $2 Minimum Shipping Charge

Calendar Of Events *continued*

August 22 – 24 Upgrade, Repair, Maintenance, Troubleshooting Of The IBM PC, XT, AT, PS/2 & Compatibles Sacramento. Personal Computer Group. Call (201) 377-7400 for registration.

August 22 – 23 Four Short Courses On Systems Development: A PC Based Methodology. Sunnyvale. Contact TCA Training Institute at (408) 737-2665.

August 23 How To Automate Your Business Accounting Seminar. San Francisco. J.C. Lukrich & Co. Call Pandora, (415) 864-6770.

August 24 – 26 Developing Applications With dBase III Plus Course. San Jose. Personal Computer Group. Call (201) 822-1230.

August 25 – 26 Time Line Workshop (Version 3.0). San Francisco. Contact Sherri Davis, Symantec-Breakthrough Software, (415) 898-1919.

August 29 – 30 Four Short Courses On Systems Development: A PC Based Methodology. San Francisco. Contact TCA Training Institute at (408) 737-2665.

September 8 Time Line Workshop (Version 2.0). San Francisco. Contact Sherri Davis, Symantec-Breakthrough Software, (415) 898-1919.

September 13 – 16 Relational Databases: Design, Tools & Techniques Course. San Francisco. Integrated Computer Systems. Call 1-800-421-8166.

September 14 – 17 Seybold Desktop Publishing Conference. Santa Clara Convention Center. Seybold Seminars (213) 457-5850.

September 16 Time Line Workshop (Transition to Version 3.0). San Francisco. Contact Sherri Davis, Symantec-Breakthrough Software, (415) 898-1919.

September 19 – 21 Eurofax '88. Amsterdam, The Netherlands. CAP International. Call Martha Johnson, (617) 982-9500.

September 22 – 23 Time Line Workshop (Version 3.0). San Francisco. Contact Sherri Davis, Symantec-Breakthrough Software, (415) 898-1919.

September 24 A Seminar On Music Visualization — Beyond MTV! San Francisco. Suite 3-D. Call (415) 882-7063.

September 24 Computer Swap. Santa Clara County Fairgrounds, San Jose. Computer Swap America. (415) 366-9162.

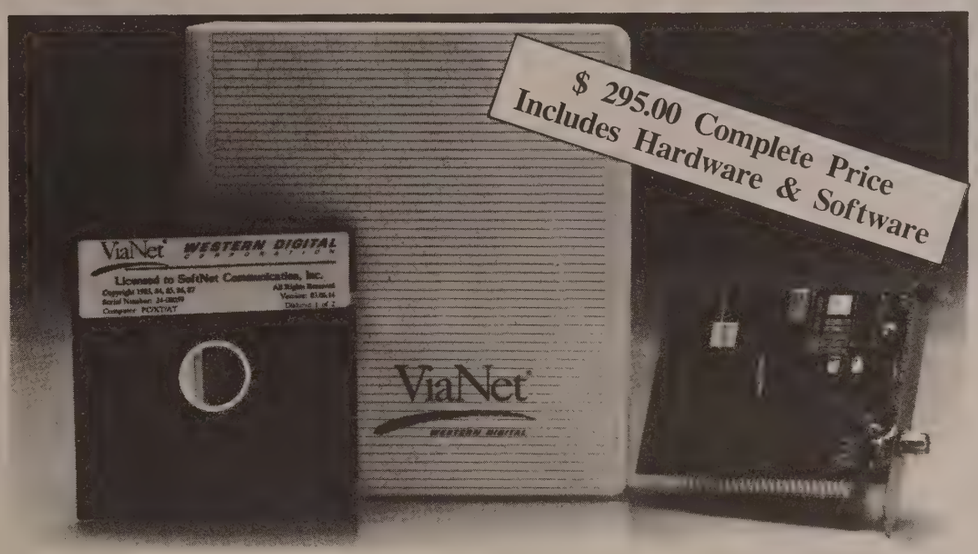
September 27 – 30 Fiber Optic Communication Systems: Design Tools & Techniques Course. San Francisco. Integrated Computer Systems. Call John Valenti, 1-800-421-8166.

---

*As a community service, **MicroTimes** lists trade shows, seminars, and other special events in the Calendar of Events free of charge on a space-available basis. To improve the likelihood of your listing's timely inclusion, please make sure we have the necessary information no later than the first of the month two months before the cover date of the issue in which you'd like it to appear (i.e. the deadline for the March issue, on the street in February is January1). Send to: MicroTimes Calendar of Events, 5951 Canning St., Oakland, CA 94609.*

News about user group meetings and other regularly scheduled activities should be sent to User Group Network at the same address.

ViaNet & KAL1000
Local Area Network
The Perfect Pair!!!



The performance leader of all LAN systems based on Western Digital's ViaNet (R) software.

- 2 Mega bits/sec
- Serverless, fully distributed
- Supports DOS 3.xx
- Can share All resources
- Unix-like DOS shell
- Password Protection
- File & Record lock
- Easy to install & use

SoftNet Communication, Inc.

Call Toll Free!
(800) 533-1157
15 Hillcrest Drive, Great Neck, NY 11021 (516) 829-6536

C.G.I. Technology-The Only Hardware Sales Company With A *WRITTEN* Lowest Price Guaranteed Policy

DRAM We Buy and Sell DRAM
At Very Good Prices
Call For Latest Prices & Availability

We Certainly Welcome OEM & RESELLERS

- Personal Computers & LAN Systems by TEXAS INSTRUMENTS 12 80286 up to 24 multiuser, 20 MHz 80386 36 active terminals and 68020 based system for up to 128 users.
- WYSE terminal, 286, 386 & PC's
- Complete line of HOUSTON INSTRUMENTS Plotters & Digitizers

C.G.I. TECHNOLOGY

CALL FOR LOWEST GUARANTEED PRICE
(408) 983-1250

Cost and Quality . . . the Rose Hill Compatibles!

On-Site Service and Leasing Available!

ATROSE MODEL 1800

IBM AT Compatible
80286, Runs at 6 or 8MHz
512K Expandable to 1 MB
Floppy/HD Controller
1.2 MB Floppy Drive
192 Watt Power Supply
AT Style Keyboard
200 Page Manual
48 Hour Burn-In & Test
One Year Warranty
MADE IN U.S.A.

UNIT PRICE
$875.00
(Add $125 for 10 MHz)

ATROSE MODEL 1700

IBM AT Compatible
80286, Runs at 8 or 12MHz 0 Wait
1 MB on Board
Floppy/HD Controller
1.2 MB Floppy Drive
192 Watt Power Supply
AT Style Keyboard
Small Footprint
200 Page Manual
48 Hour Burn-In & Test
One Year Warranty
MADE IN U.S.A.

UNIT PRICE
$1,275.00

XTROSE SUPER TURBO

IBM XT Compatible
4.77 or 10MHz
AT JR. Style Case
Lock, Reset & Turbo Switch
256K on Board, Expandable to 640K
360K Floppy Drive
Floppy Adaptor
8 Slots
150 Watt Power Supply
On Year Limited Warranty
Full Documentation
Burned In & Tested

UNIT PRICE
$425.00

386 ROSE MODEL 81 TOWER SYSTEM

80386, Runs at 20 MHz
1 MB Expandable to 2 MB on Board
LSI Logic Support to 16 MB 32 Bit memory
PC AT BUS Timing for Adaptor Compatibility
Socket for 80387
Socket for 80287
EGA Graphics on Board
Support 640 × 480
System & EGA BIOS Executed in 32 Bit Memory
EGA BIOS Supports Extended Video for Multisync
32 Bit Slot
2 Serial Ports
2 Parallel Ports
Floppy/HD Controller
1.2 MB Floppy Drive
Enhanced RT Style Keyboard
200 Watt Power Supply
Burned-In & Tested
Documentation
One Year Limited Warranty
MADE IN U.S.A.

UNIT PRICE
$2,599.00

Look to the Rose . . .

ROSE HILL SYSTEMS

4865 Scotts Valley Drive Scotts Valley, CA 95066
CA Call: (408) 438-3871 Outside CA, Call: (800) 248-ROSE Tech Support, Call: (408) 438-3939

No Surcharge for VISA or MasterCard TERMS: Cash, VISA, or MasterCard. C.O.D. and Company Check on Approval.
Because of our Low Prices, all sales are final. A 15% charge will be applied for all unauthorized returns. Prices subject to change without notice.
IBM, AT, and XT are registered trademarks of International Business Machine Corporation. NEC Multispeed EL is a registered trademark of NEC Corporation.

Ask about our NEW VNA Multi-User, Multi-Tasking System

386 ROSE MODEL 3800

80386 Runs at 20MHz
SI = 21.5
1 MB Expandable to 2 MB on Board
Supports 16 MB 32 Bit Memory
PC AT BUS Timing for Adaptor Compatibility
Socket for 80387
Socket for 80287
EGA Graphics on Board
Supports 640 × 480 Multisync Extended Graphics
System & EGA BIOS Executed in 32 Bit Memory
32 Bit Slot
2 Serial Ports
2 Parallel Ports
Floppy/HD Controller
1.2 MB Floppy Drive
Enhanced RT Style Keyboard
200 Watt Power Supply
Burned In & Tested
Documentation
One Year Limited Warranty
MADE IN U.S.A.

UNIT PRICE
$2,349.00

286 ROSE LAPTOP MODEL 20

80286 Runs at 12 MHz
1.44 MB 3½" Floppy
20 MB Hard Drive (Opt 50 MB)
1 MB RAM Expandable to 4 MB
High Resolution 720 × 400 LCD Display
2 Serial, 1 Parallel Ports
Hercules & CGA Compatible
Includes Battery Pack & Soft Case

UNIT PRICE
$2,695.00

ATROSE 1800B

IBM AT Compatible
Runs at 10MHz 0 Wait
512K Expandable to 1 MB
Floppy/HD Controller
1.2 MB Floppy Drive
AT Style Keyboard
192 Watt Power Supply
2 Serial Ports
2 Parallel Ports
Reset Switch
200 Page Manual
48 Hour Burn-In & Test
One Year Limited Warranty
MADE IN U.S.A.

UNIT PRICE
$1,149.00

386 ROSE MODEL 3000

80386 16 MHz
1 MB with 64K Ram Cache
LEDs for Speed, Power, and H.D.
8 Expansion Slots
Floppy/HD Controller
1.2 MB Floppy Drive
AT Style Keyboard
Front Panel Reset
200 Watt Power Supply
48 Hour Burn-In & Test
One Year Limited Warranty
MADE IN U.S.A.

UNIT PRICE
$1,799.00

SYSTEM OPTIONS:

Mono System, add . . $119.00
Color System, add . . $299.00
EGA System, add . . . $499.00
VGA System, add . . . $749.00

XT HARD DISKS

20 MB System, add . $299.00
30 MB System, add . $325.00

AT HARD DISKS

20 MB System, add . $250.00
30 MB System, add . $350.00
40 MB System, add . $395.00
71 MB System, add . $749.00
80 MB System, add . $775.00

Send for Rose Hill Catalog * Hundreds of Other Items!

NEWS AND ANALYSIS

BY PAUL HOFFMAN

IN THE NEWS...

US Copyright Office On Look And Feel 24

Apple-Microsoft Lawsuit Divided 24

Apple Buys Orion Systems . 24

IBM Exempts Chips And Technologies In PS/2 Licensing .. 26

Surprising Delay In Lotus Case 26

Money-Back Excel Guarantee 26

New Computer Books 26

Dissident UNIX Group Formed 30

Philips Wins Patent Suit 30

New 3D Graphics Specification From Pixar 32

EA Sued By Game Publishers 32

Paradox For OS/2 36

Microsoft's Mac Product Announcements 36

RISC Chip For PostScript 38

HP To Market Zenith Portable 38

HyperCard Whole Earth Catalog 38

New HyperCard Release 40

Sony's 68030 Workstation .. 40

Novell To Support Macintosh 40

IBM's New PS/2 Machines ... 40

Paul Hoffman is an industry analyst who has been covering microcomputer technology for ten years. He can be reached on USENET (phoffman@well) and MCI Mail (264-3171). He also writes popular microcomputer books.

Did US Copyright Office Remove Key Look And Feel Wording Under Pressure?

In an important new decision, the Copyright Office of the U.S. (part of the Library of Congress) has decided that all copyrights for a program must be included in a single registration for that program. This means that if a software company wants to copyright the screens in a program, it must do so at the time of registration as part of the registration for the software; it cannot decide later to also copyright the screens. This ruling only pertains to new copyrights, and the decision notes that "recent judicial decisions do not yet lend clear guidance on the copyrightability of screen displays."

The wording of official notice ("Notice of Registration Decision: Registration and Deposit of Computer Screen Displays [Docket No. 87-4]") apparently shook up some players in the legal and software industries. In the notice sent out by the Copyright Office on June 6, signed by the Registrar of Copyrights and the Librarian of Congress, the Copyright Office stated clearly that the copyright applicant had only a limited number of choices of what to fill in on the copyright form for the description of what is being copyrighted. The allowable descriptions were listed as "entire work," "computer program" and "computer program code and screen displays." Any screens that were to be copyrighted must be represented in the application.

The official notice then went on to say, "Applicants should not refer to uncopyrightable elements such as 'menu screens'; 'structure, sequence, and organization'; 'layout or format'; and the like." To many, this indicated that the Copyright Office believes that these elements are uncopyrightable.

Apparently, the Copyright Office came under some intense pressure during the week, because by the time the notice appeared in the *Federal Register* on June 10, the word "uncopyrightable" had disappeared from the sentence. According to Dorothy Schrader, General Counsel to the Copyright Office, the change between the signed decision and the publication in the *Federal Register* "had been requested by others," but she refused to say who those others were. Clearly, any software company trying to copyright menu screens, structure, sequence, organization, layout or format would be very concerned if the Copyright Office had decided that those were not copyrightable. Since copies of the decision with the word "uncopyrightable" were widely distributed, there may be a case in either direction.

Judge Divides Apple Lawsuit In Two Parts

Microsoft successfully divided the lawsuit against it by Apple in two parts, assuring that the breach of contract portion is heard before the copyright questions. Apple wanted both sets of arguments heard in one trial in order to show how the contract related to their copyright case; Microsoft wanted the trials

Apple Buys Orion Network Systems To Increase Foothold In SNA Market

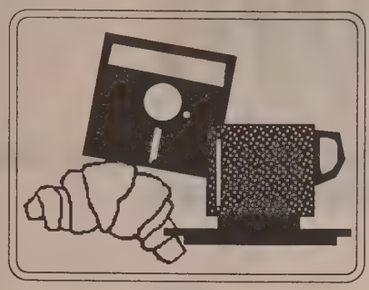
Another month, another acquisition. Apple continued its spree of purchasing communications company by buying Orion Network Systems, a vendor of SNA connection software. SNA (IBM's System Network Architecture) is one of the major protocols for communication in the IBM mainframe arena.

Orion is no stranger to Apple, having developed *MacAPPC* for Apple and helping Apple to get a better hold on the Mac-to-mainframe market. Orion, an eight-year-old software company in Berkeley with 30 employees, sells its software interfaces to other OEMs as well as to Apple. Under the purchase agreement, Orion becomes a wholly-owned subsidiary of Apple but will be able to continue licensing its software to other vendors. Apple will place executives such as Jean-Louis Gassee on the Orion board of directors, but will probably not do much to change Orion's focus on SNA.

While Orion will certainly be giving Apple the first crack at new products and releases, the acquisition gives Orion clout with larger Apple customers who want to link Macintoshes into existing IBM networks.

Keep Up On The Latest Software

BREAKFAST WITH LOTUS



800-SOFTWARE and LOTUS DEVELOPMENT invite you to a series of breakfast demonstrations to view Lotus' latest software. Join us at 8:30a.m. or 9:30a.m. (each session lasts 45 minutes) on the following dates for coffee and pastries. All sessions will be held in the Lotus office at 101 California Street, Suite 4600, San Francisco.

Tuesday, July 12: Document Creation with MANUSCRIPT and FREELANCE PLUS.

The new version of MANUSCRIPT is a wonderful word processor for long documents and printing projects. MANUSCRIPT can easily combine text and graphics from stand alone graphics programs such as the best selling FREELANCE PLUS.

Tuesday, July 26th and Tuesday, August 9th : AGENDA.

Lotus AGENDA is a new kind of software - a personal information manager that helps you obtain control of information and allows you to be more creative with it. AGENDA lets you quickly find the details you need, marshal scattered items of information and use that information to prepare stronger documents, more productive meetings and more effective actions.

Lotus Agenda is a better personal information manager than traditional software because it lets you work the way you think.

How you think	How traditional software works	How Lotus Agenda works
• You think multi-dimensionally. An information item may link in many different ways to many other items.	• Items link linearly, failing to reflect the complexity of your thinking.	• Items link multi-dimensionally, mirroring the complexity of your thinking. You type information on a free-form "scratchpad".
• Initially, the information you generate and collect may not take a set form.	• You must shape information to rigid form.	• An item is filed in multiple "slots," for multiple purposes.
• You're likely to use the same piece of information several different ways.	• An item is normally filed only in one "slot".	• You can gather information first, and decide later how to structure it.
• You often need to assemble information before you know how to structure it.	• You must decide on the structure before you assemble information.	• You can structure information any way you like, and restructure it at any point.
• You have your own personal ways of structuring information.	• You must follow the hierarchical, records-and-fields structure imposed by traditional databases and outliners.	• It offers unlimited views of fast changing information. It gives you a way to dynamically view the complex relationships that develop between items.
•You want to see information from different perspectives.	• It offers limited views of the same information.	

Agenda is only $279.00 from 800-SOFTWARE

Tuesday, August 2: Financial Publishing.

Financial analysts and others involved in the creation and updating of reports involving numbers and charts will learn how high quality financial reports can be easily created with GRAPHWRITER II and MANUSCRIPT.

• A Free Copy Of One Program Will Be Given Away At Each Session •

• CALL TODAY TO MAKE YOUR RESERVATIONS • 415-644-4880 •

800-SOFTWARE

918 PARKER STREET, BERKELEY, CA 94710

NEWS AND ANALYSIS

separate in order to show that it could not have violated any copyright since Apple had already granted them license to any copyright that Apple might have had. Judge Robert P. Aguilar accepted the motion, called a "motion to bifurcate," based on the size of the case and the fact that all federal courts have huge backlogs of cases. The judge stated that the first case will be only on the scope of the original licensing agreement.

If Microsoft is successful in the first part of the case (which may be heard in October or November), they will have a much stronger legal case to throw out the entire matter and probably receive damages from Apple for lost business and a tarnished reputation. In the meantime, Hewlett-Packard, the other defendant in the case, is trying to get one of Apple's main law firms disqualified from the case because that firm had also done work for Hewlett-Packard. The firm, Fenwick, Davis, and West of Palo Alto, denies that it did significant work for Hewlett-Packard.

Microsoft has taken the offensive in the publicity war on the case, sending out copies of the bifurcation order. Initially, Apple had taken the upper hand in publicizing the case, but has pulled back significantly. The next step in the case is "discovery," where lawyers for each side question relevant employees of the opposing side in order to find out what they can about the facts that they can use in their cases. Judge Aguilar castigated lawyers for both sides for not estimating the amount of time that they might need to perform discovery, calling the lawyers "exceptionally uncooperative."

IBM Exempts Chips And Technologies From Licensing Requirement

According to Chips and Technologies, IBM has exempted them from having to license IBM's PS/2 technology because C&T only produces the chips for the clones, not the clones themselves. However, companies making clones using C&T's chip sets will still have to license the patents from IBM directly. The announcement cleared up some confusion as to who had to procure the licenses and who didn't. C&T indicated that it would help any clients to deal with IBM on the technology licensing, however. In an interesting note in the announcement, C&T indicated that, if IBM changed its mind on the agreement in the future, C&T would be able to get such a license on IBM's "standard terms."

In a related announcement, Dell Computer announced that it had reached an agreement with IBM to license the the appropriate patents so that Dell could make two models of PS/2 clones. At the same time, Dell agreed to pay retroactive payments to IBM for its previous cloning of the IBM PC. By doing this, Dell is one of the first companies to come clean with what IBM believes to be its proprietary technology. Dell is one of the fastest-growing clone manufacturers who sell their own systems.

Almost A Ruling In Lotus Case

To the extreme frustration of all the lawyers in the ongoing Lotus lawsuits, Federal Magistrate Joyce Alexander removed herself from the case on no notice when she remembered that her brother works for Lotus.

After having the cases (*Lotus v. Paperback Software, Lotus v. Mosaic, SAPC v. Lotus*) before her for many months, she was about to make the first rulings in the case. Over 20 lawyers from all the parties, as well as lawyers from unnamed parties in the case, had assembled in Magistrate Alexander's courtroom. She began to read the names of the cases when she suddenly realized why the name "Lotus" was so familiar. "I have to recuse [voluntarily withdraw] myself from these cases: I just remembered that my brother works for Lotus!"

Lawyers for Lotus immediately announced that they had no idea of the relationship. Although she refused to name her brother, Lotus later said that Magistrate Alexander's brother works in the distribution department. The case will go before a new magistrate and the arguments will be resubmitted shortly.

Don't Like Your Excel For The PC? Return It For A Refund

If you're tired of software warranties that don't let you return defective or simply unattractive software, Microsoft has a deal for you. At any time until January 1, 1990, you can return your copy of *Excel for the PC* to your dealer and receive your money back (Microsoft will, of course, reimburse the dealer).

This unprecedented move is an effort to keep *Excel* sales strong while people wait for Lotus *1-2-3*

New Computer Books Announced At American Bookseller's Association

The fall lineups of microcomputer books were announced at the annual ABA conference in Anaheim at the most widely-attended book conference in the US. The conference, held by the bookseller's trade group, is usually where most computer books for the duration of the year are announced and, in some cases, shown in advance.

Although microcomputer books rarely produce any blockbusters (Danny Goodman's *Complete HyperCard Handbook* being one of the recent exceptions), computer book publishers always hope to get enough notice from the bookstores to get them to carry their particular titles. There has always been a problem with bookstores not understanding how to shelve and display computer books, so each publisher was trying hard to get into the limited space allotted for computer books by stores.

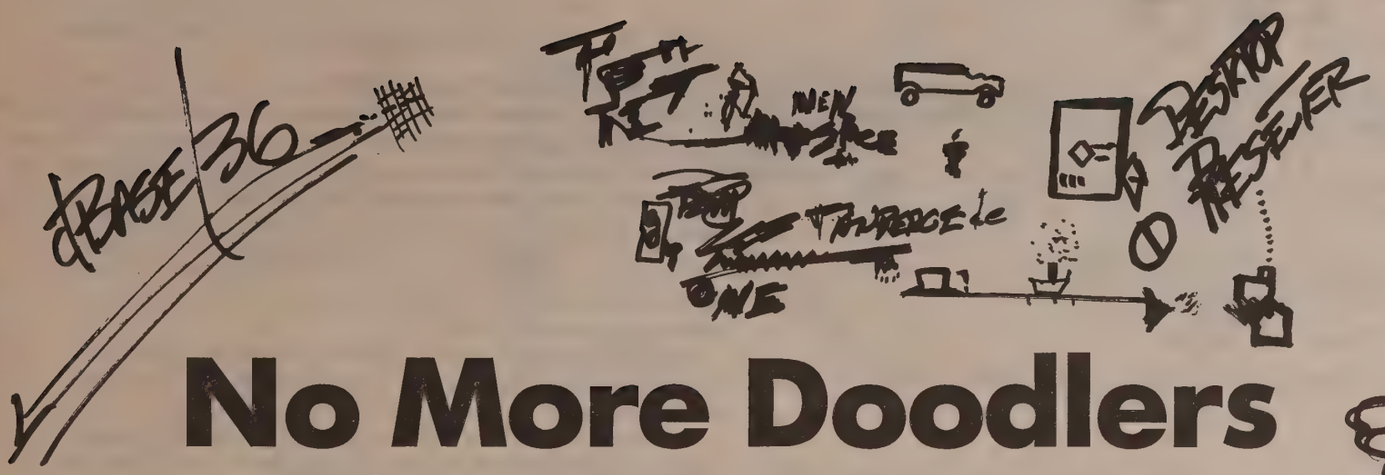
The big topics for new books this year will be OS/2, *HyperCard*, *Excel* for the PC, and *Quattro*, with almost every publisher vying for those markets. Books on *WordPerfect* remained popular throughout last year, so there will be a host of new ones, most of them revised for *WordPerfect* version 5. Lotus' slowness in getting out *1-2-3* version 3 and Ashton-Tate's delay for *dBASE IV* played havoc with some publishers' fall lists, since they didn't know when they could assume that the books would be ready to publish. Many publishers will have to miss publishing deadlines due to the software not being complete enough for them to finish their books.

At the meeting, the heads of most of the computer book publishers met to try to form a trade association. However, most felt that it was premature to do so and the benefits of such an association weren't clear. They will meet again this fall at COMDEX.

Some of the interesting highlights of the computer book lists that will be available between now and October include:

- **Microsoft Press** — *SQL Handbook* by the folks at Sybase; *The World of Mathematics* by James Newman, a revision of the classic library that has been out of print for many years.
- **Brady** — *The Paul Mace Guide to Data Recovery* by the creator of the popular recovery package; Brady is now the publisher for the Ashton-Tate Computer Book line.
- **TAB** — *The Frozen Keyboard: Living with Bad Software* by Boris Beizer.
- **Addison-Wesley** — *The Lotus Guide to 1-2-3* by David Bookbinder, the official guide from Lotus; *Real World PostScript* edited by Stephen Roth, a collection of articles on programming in PostScript.
- **Wiley** — *Introducing C to Pascal Programmers* by Namir Shammas.
- **Bantam** — *Revision of Complete HyperCard Handbook* by Danny Goodman to cover version 1.2; *The HyperCard Developer's Guide*, also by Danny Goodman.
- **MIS:Press** — *XCMD's for HyperCard* by Gary Bond.
- **Facts on File** — *Blue Magic* by James Chposky and Ted Leonsis, about the internal IBM politics that shaped the IBM PC and PS/2.
- **Contemporary Books** — *The Ultimate Entrepreneur: The Story of Ken Olsen and Digital Equipment Corporation* by Glenn Rifkin and George Harrar.
- **Howard Sams** — *MS-DOS Papers by the Waite Group*, advanced articles for programmers.
- **Goldstein & Blair** — *The Macintosh Bible*, Second Edition edited by Arthur Naiman, the top-selling Mac tip book.

Also announced at the show was *Chance*, a new magazine on statistics and computers from Springer-Verlag. *Chance* is an interesting, non-academic view of statistics and statistical thinking applied to computers.



No More Doodlers or Seat Squirmers

Create presentations that will hold your audience's attention with the ultimate Desktop Presentation System from Diamond Software.

Diamond Software has combined the technology of General Parametrics, CalComp, NEC, and AST in a total Desktop Presentation System. The system includes the Desktop Presenter from General Parametrics. The Desktop Presenter includes:

Color Metrics® - A graphics card containing MacroVision advanced technology for high resolution and 1000 color capability on your PC.

Picture It™ - an easy-to-use business graphics software package for creating and giving professional quality presentations.

PC Print Maker® - a software package for printing high resolution overhead transparencies and hardcopy in full color and black and white.

To make your presentations come alive we have included the CalComp 5902G Color Master Plotter, which has been modified to get the optimum performance from the Desktop Presenter. Using this 200 dot-per inch resolution plotter you can eliminate costly and time-consuming outside services, instead producing professional looking reports, complete with graphs and charts, in-house. How fast is ColorMaster? A full color page prints in about 90 seconds, a black and white in about 45 seconds.

Desktop Presenter Seminar
Wed., August 3—9:00 a.m. to 10:30 a.m.
Thurs., August 4—1:30 to 3:30 p.m.
at our Oakland Showroom.
433 Hegenberger Rd.
Call 430-3095 for reservations.

In addition we have included NEC's Multisync II Color Monitor. The Multisync II offers color resolution up to 800 x 560 dots on a 13-inch screen, with a 0.31 mm dot pitch. It automatically scans all frequencies between 15.75KHz and 35KHz, ensuring compatibility with a broad range of future IBM-compatible graphics boards.

You need a powerful PC to power a system like this and the AST Premium/286 is up to the job. The IBM AT compatible Premium/286 runs software 50% faster than 8MHz IBM AT. PC Magazine said when it made the Premium/286 an Editor's Choice "The Premium 286 is without a doubt the best-looking and best-performing system with a 10MHz rating."

Diamond Software is an Authorized AST, General Parametrics and CalComp reseller.

Diamond price: $9499
Retail price: $13,008

Desktop presentation system includes:
AST Premium/286, 40 Mb Hard Disk, 1Mb memory, keyboard,
NEC Multisync II monitor,
Desktop Presenter card and software,
CalComp 5902G printer/plotter.

Desktop Presenter card/software price: $2095

Diamond Software
HARDWARE AND SOFTWARE FOR CORPORATE AMERICA

CORPORATE ACCOUNTS CALL:
(415) 633-2588

7916 Capwell Drive • Oakland, CA • 94621

Harvard Graphics: The Winner For Presentations.

BY STEPHAN WICKHAM
& THE DIAMOND SOFTWARE TECHNICAL TEAM

Graphics programs are currently very popular, and many people have been asking for our recommendation of an integrated presentation graphics program.
Without question Software Publishing's Harvard Graphics 2.1 and Lotus' Freelance are the very best programs in this category. Harvard Graphics is our top choice. It has more sophisticated word-charting and more fluid graphing. It also supports more output devices. Freelance, on the other hand, is more for people who like to draw. You would be better off drawing images in a paint package and then importing the art into Harvard Graphics. This results in more dazzling results than Freelance can create by itself. Harvard Graphics is a very powerful graphics program, yet it should be simple enough for most users to learn in just a few minutes.

With Harvard Graphics, you won't have to worry about output device support. Harvard Graphics offers output drivers for a huge variety of different devices: seven different film recorders, such as the Matrix PCR and the Palette Plus, plus a number of the laser printers, color thermal printers, plotters and color inkjet printers. Harvard Graphics can export both HPGL and encapsulated PostScript files. Encapsulated PostScript files can be downloaded to Linotronic typesetting machines. General Parametrics users will be impressed to see that Harvard Graphics can drive the Video Show presentation hardware. It also supports all popular mice. It's amazing how many different devices this program can work with. If you want to be sure your equipment will work with Harvard Graphics call Diamond Technical; we have the complete list.

Many display cards are supported. You can use your Hercules, CGA, EGA, VGA, Video-7 Vega/Delux, Quadram Quad Ega, Quadram Prosync, Paradise Autoswitch, STB Systems EGA, Tecmar EGA Master and all DGIS-compatible cards. Harvard Graphics should work with most of the IBM standard display cards on the market.

There is an wide variety of file graph types available in Harvard Graphics. You can choose from area, line, bar, pie, high-low, close-open, text and organization. The text graphs have six variations including two- and three-column charts.

Organization charts are easy to use. To create one, type the names and titles for each position and create subordinate positions as necessary. Harvard Graphics will take the information and automatically create your organizational chart when you press the F2 key. Most other graphics packages will make you draw organizational charts using their packages' drawing tools. Harvard Graphics makes the task of producing organizational charts simple.

Harvard Graphics adds some new graph types to its powerful selection. You will now find histograms, semi-log, log-log, paired bars, dual Y axis and proportional pie charts. In addition there are now 3-D options to produce 3-D bar, line and area charts.

Style choices for all graphs can be made in one of two ways. You may fill in an option form specifying what you want, or you may interactively make your choices from the graphics screen. You may change from the chart display to the options form with one keystroke to make changes. Charts can be sized up and down and located anywhere on a page. Up to six charts can be combined together on one page.

Bar, line and scatter graphs support up to 240 numeric data points, up to eight data series and up to 60 non-numeric data points. Scaling is available one of two ways: you can use the automatic axis scaling, or you may define the scaling manually. In addition, there is negative value support on all scaling. Bars can be linked and/or shadowed.

Pie graphs can be made from up to twelve slices. Pie charts can be combined with column charts. Pie charts may be exploded for greater emphasis.

You may use the Harvard Graphics drawing tools to customize your charts. You can draw circles, ellipses, polygons, polylines and curves with fill and outline color and pattern options. There are 21 different types of boxes available. You can use the grid lines and "snap-to" lines and draw regular lines and arrows. Lines can be any width. Drawings can be grouped and ungrouped, so that you can easily move them across the screen.

It would be nice if Software Publishing added support for free-hand curves and a zoom feature to work on details. Users needing heavy custom drawing support are better off purchasing a paint program along with Harvard Graphics or use Lotus Freelance. Bit-map files from PC Paint or Dr. Halo can be easily imported into Harvard Graphics to add razzle-dazzle. Harvard Graphics is still the best choice for anyone not needing to embellish their graphs with fancy freehand drawing. If you are not an artist, it is comforting to know that there are about 300 premade symbols. It is also possible to turn charts that you create into symbols, and it's already possible to purchase optional symbol libraries from Software Publishing. New symbol libraries should continue to be developed by Software Publishing.

Type support is excellent. There are six type fonts, including Executive, Roman, Sans Serif, Script, Gothic and Square Serif. Boldface, underline, italics, fill and color are supported text options. There are no practical limits on the type size.

Harvard Graphics is the only non-Windows graphics product that I have seen which supports gradiated backgrounds. It is also the only presentation graphics package that has a spelling checker. The 77,000 word spelling checker will proof all the text in your charts on demand.

There are many accessories available for Harvard Graphics. You can choose from 300 New Business Symbols ($99 list), U.S. Map Maker ($149 list), Quick-Charts ($99 list), Designer Galleries ($99) and Screen Show Utilities ($149 list). Quick-Charts is a collection of 125 line, pie, area, high-low and bar charts in a ready to use template form. Designer Galleries includes different preformatted charts and twelve different color palettes.

For users who like to put together slide-show style graph presentations, there is a feature called Screenshow. You can chain together images and control motion forward, backward or pause. There are ten different slide-to-slide transitions possible including fades, wipes and builds. You specify the display time for each slide. Your mouse can be used to work like a remote control unit on a regular slide projector, only you use it with Harvard Graphics. Slide shows are an especially good way to make presentations. Companies that have projection monitors or large screen monitors will find this program especially nice.

There is really strong support for importing data and exporting charts. Harvard Graphics can read Lotus 1-2-3 and Symphony-named graphs and worksheets. An automatic DataLink can be made into your Lotus spreadsheet to connect it with a chart template. Each time the template is retrieved it will automatically link itself to the data or graph from your spreadsheet. This is nice when the data in your spreadsheet is always changing.

If you produce many charts from spreadsheet data this feature alone can make Harvard Graphics worth purchasing. Why recreate your chart from scratch each time your data changes? With Harvard Graphics you set your graphs up once and the automatic features take over. Ventura and PageMaker users can import graphs saved in PostScript, HPGL and LL. You can read chart files from other Software Publishing products such as PFS:First Choice, PFS:Professional Plan and PFS:Graph. Data can be read from ASCII files. Charts and graphs can be exported to Software Publishing's Professional Write. Harvard Graphics charts can be read into WordPerfect 5.0. This creates a really slick combination which we highly recommend. If you require assistance, just ask Larry Kelley, our software expert for help.

A network LAN pack version is also available. It will support the IBM PC LAN Program (Token-Ring or PC Network), Novell Advanced NetWare and 3Com 3Plus. You can also use networks that are fully compatible with one of these standards.

You will need a hard disk or two 3 1/2" drives to run this powerful program. Your system should have 512K of RAM or 640K if you are using VDI, macros or are running the network version. Harvard Graphics is not copy protected.

Harvard Graphics has a macro language that can automate repetitious tasks. This is useful for guiding new users through chart production or just to automate recurring tasks. Batch printing is also fully supported.

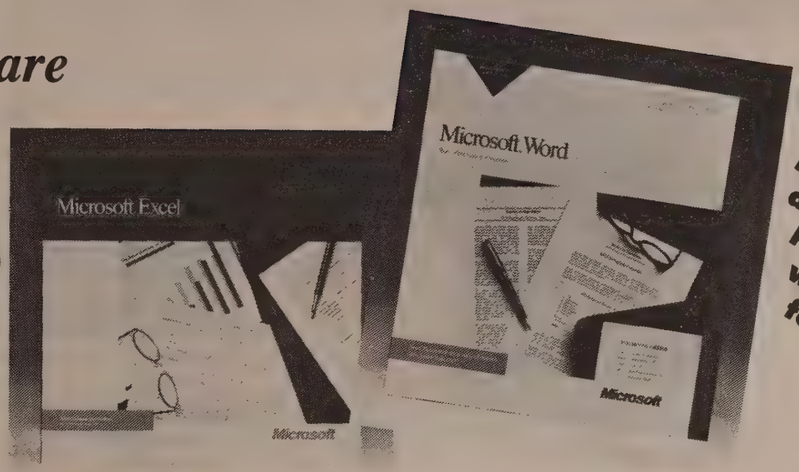
Companies wishing to have their new creation reviewed are requested to contact Diamond Technical. Users wishing to see a particular product or product category reviewed are also welcome to call. I am interested in finding out on what products you need selection help. This information will form the basis of future columns of On the Firing Line.

Harvard Graphics 2.1 ($495 list) and other fine Software Publishing products can be purchased at the Diamond Software Showroom. The address is 433 Hegenberger Road in Oakland. You may call (415) 430-3095. Call for pricing. Technical support on Software Publishing or many other products is available through Diamond Technical at (415) 633-2589. We are here to serve you.

ADVERTISEMENT

At Diamond Software we recommend:

EXCEL GUARANTEED UNTIL JANUARY 1990



Buy Microsoft Word for the PC from Diamond Software and get Microsoft Pageview + $485 worth of Bitstream fonts free!

Diamond *price:* **$319** *List: $495*
LIMITED OFFER GOOD THRU 8/15

Diamond *price:* **$219** *List: $450*
Price good thru 8/15. Giveaway offer good until 7/31.

overachievers

from Microsoft®

Microsoft Excel takes full advantage of the power of 286 and 386 based computers. The most powerful spreadsheet, Microsoft Excel allows you not only to work faster and consolidate data quicker, but also to create annual report quality output. And its customization tools let you create macros easily and build your own programs.

Microsoft Word version 4.0 gives you the power to create professional looking output—plus the speed to do it very, very quickly.

In business for six years, at **Diamond Software** we know that great pricing is important. And. . . in addition to the lowest possible price on software, we handle all your hardware needs as well. Monitors. Hard Drives. Printers. Scanners. And computers from AST and WYSE.

Finally, you can be sure that any product purchased from **Diamond Software** receives our full support.

We would like to send you a collection of reprints from MICROTIMES written by Stephan Wickham, our Technical Manager *. . . Just send us $1.00 (refundable with purchase) and the coupon at right.*

Diamond Software has the technical knowledge to back the products we sell.

☐ Send me _____ copies of Microsoft Excel at $319 a copy plus 7% sales tax and $4.00 shipping and handling. Call our showroom to place a credit card order.

☐ Send me Microsoft Word at $219 plus 7% sales tax and $4.00 shipping and handling. Call our showroom to place a credit card order.

☐ Send me the collection of Stephan Wickham's ON THE FIRING LINE, reprints from MICROTIMES. *I am enclosing $1.00 which will be applied towards a future purchase.*

Name _____
Title _____
Company _____
Address _____
City _____ State ____ Zip _____

Send to: ***Diamond Software***
433 Hegenberger Rd., Ste. D, Oakland, CA 94621

Diamond Software

HARDWARE AND SOFTWARE
FOR CORPORATE AMERICA

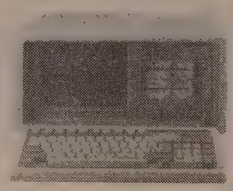
7916 Capwell Drive • Oakland, CA • 94621

CORPORATE ACCOUNTS CALL: (415) 633-2588

Your Source for Reliable Computers & Peripherals Since 1983

MONTHLY SPECIAL

- TOWER 386 BASIC SYSTEM ..... $CALL
- 44 MB HARD DISK 525
  (Half Height, 28ms, Auto Park)
- 20 MB Hard Disk (65ms) 215
- 80 MB Hard Disk
  (Half Height, 28 ms, Auto Park) 795
- Star NX-1000 Printer 179



THE WORLD'S 1st
EGA PORTABLE 386 . . .CALL
EGA PORTABLE 286 . . .CALL

INTRODUCING
BEAVER HI-RES 1024
- 14" Paper White Monitor (Flat Screen)
- 1024x768 Resolution
- Hi-Res Graphic Card **ONLY $595**
- For Desktop Pub. & CAD

12MHz 0 WAIT 286
- 512K Memory
- 1.2MB Floppy
- HD/FD Controller
- Keyboard
- **Norton SI = 15.3**

ONLY $895

SYSTEMS

PORTABLE 386 ..... $3150
- 44MB hard disk (28ms) • 1MB RAM
- 20 MHz (0 Wait) • 1.2 MB floppy
- Serial/parallel port

PORTABLE 286 ..... $1395
- 512K RAM • 10MHz (0 wait)
- 1.2MB floppy • MGP card

PORTABLE TURBO 8088 ..... $995
- 10MHZ • 640K • Two floppy drives
- Serial/parallel/clock/game

SUPER BABY 286 ..... $CALL
- Small Foot Print Case • 200W PS
- 1 MB RAM • 10 MHz (0 Wait)/12 MHz (0 Wait)
- 1.2 MB floppy • Mono Monitor

386 DESKTOP $2050
- 1 MB RAM • 1.2MB floppy • 200W P/S
- WA-2 controller • 101-key keyboard

10MHz TURBO 8088 ..... $CALL
- Monitor • 150W P/S • 640K RAM
- One floppy drive • Keyboard

Call For EGA or Color Upgrade

MONITORS

EGA Monitor $350
14" Amber w/base (by SONY) 115
Samsung amber 12" w/base 74
RGB Monitor (14") 250
Multi-Frequency Monitor ..... CALL

POWER SUPPLY

220W $65
150W 49

KEYBOARDS

RT style enhanced 101-key
- with **CLICK** sound $65
- no click sound 55

84-key for 386/286/8088 Machine
- with **CLICK** sound (by Fujitsu) 65
- no click sound 40

BOARDS & ADD-ON CARDS

386 System board ..... CALL
Baby 286 System Board (0K) $295
12MHz (0 Wait) 286 Board 299
I/O card (**2S/2P**) for 386/286 49
Multi I/O card 50
I/O Plus II card 45
Floppy controller 45
(for 1.2MB/720K/360K floppy)
Floppy controller for 360K only 25
286 accelerator card 199
Hard disk controller for 8088 65
WA-2 controller for 386/286 129
EGA Wizard Deluxe 199
Mono/graphic/printer card 45
Color graphic w/printer card 40

ACCESSORIES

Baby 286 case w/200W Power (Small Foot Print) $125
Full size case for 286/386 65
Portable computer case 450
Keyboard drawer (wood) 30
Diskette box $5.95
Vertical computer stand 15
Switch box (all models) 25
Panel Display 45
(Show Speed & I/O Access, Reset)

DRIVES

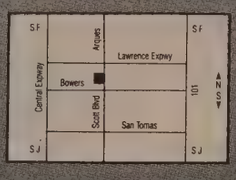
30MB w/controller $288
20MB w/controller 275
40MB drive (40ms) 379
1.44MB 3.25" floppy 109
1.2MB floppy 95
720K 3.25" floppy 95
360K floppy 69

Prices subject to change w/o notice

Dealer Pricing & Quantity Pricing Available

STORAGE SYSTEM ENGINEERING SERVICE

3350 Scott Blvd., Building 19, Suite 1902 (near Bowers Ave.)
Santa Clara, CA 95054 **(408) 727-6042**



FAX 727-6042
HOURS: 10 AM-7 PM
Mon-Sat

master charge VISA

NEWS AND ANALYSIS

version 3 to be released. Microsoft wants people to feel free to buy *Excel* now and get used to it before the new release of *1-2-3* becomes available in the fall. If you end up liking *1-2-3* more, you can return your *Excel* to the dealer for a full refund. Microsoft calls this a "win-win" guarantee since you will be sure either way (unless you buy *1-2-3* and don't like it).

The offer makes it easy to try out *Excel*, since Microsoft can't put out demonstration disks due to the large amount of disk space needed for Microsoft *Windows*, which is required for *Excel*. Microsoft says that it will be sure that any Microsoft dealer gives full refunds and will back up users who cannot get the refund from their dealers.

UNIX Unity Beginning To Unravel

Much to AT&T's dismay, a group of major UNIX vendors have formed the Open Software Foundation (OSF) to develop a software environment based on IBM's version of UNIX, AIX. The move was a direct slap at AT&T and its next version of UNIX, which it is creating with the help of Sun Microsystems.

The group consists of IBM, DEC, Hewlett-Packard, Siemens, Nixdorf, Groupe Bull and Apollo, and each member has contributed $4.5 million to the cause. The basis of the group is that the members do not feel confident that AT&T will move forward in a manner that each of them could follow, and that AT&T was not as interested in open standards as they are. The system that OSF plans to put together will be based on the international POSIX standard for operating systems, which is close to the basis for UNIX. Each member will also contribute software technology to the final product.

AT&T expressed open resentment at the move, and claimed that they were only asked in at the last moment. They scoffed at the idea that large purchasers of UNIX systems would wait for the group's product, saying that the largest UNIX market is for systems that are compatible with what is out there already. Notably absent from the OSF clan was Unisys, who immediately reaffirmed its alignment with AT&T. Although they were not mentioned at the announcement, Microsoft later said that they support the goals of the OSF and that it would work with vendors in both worlds.

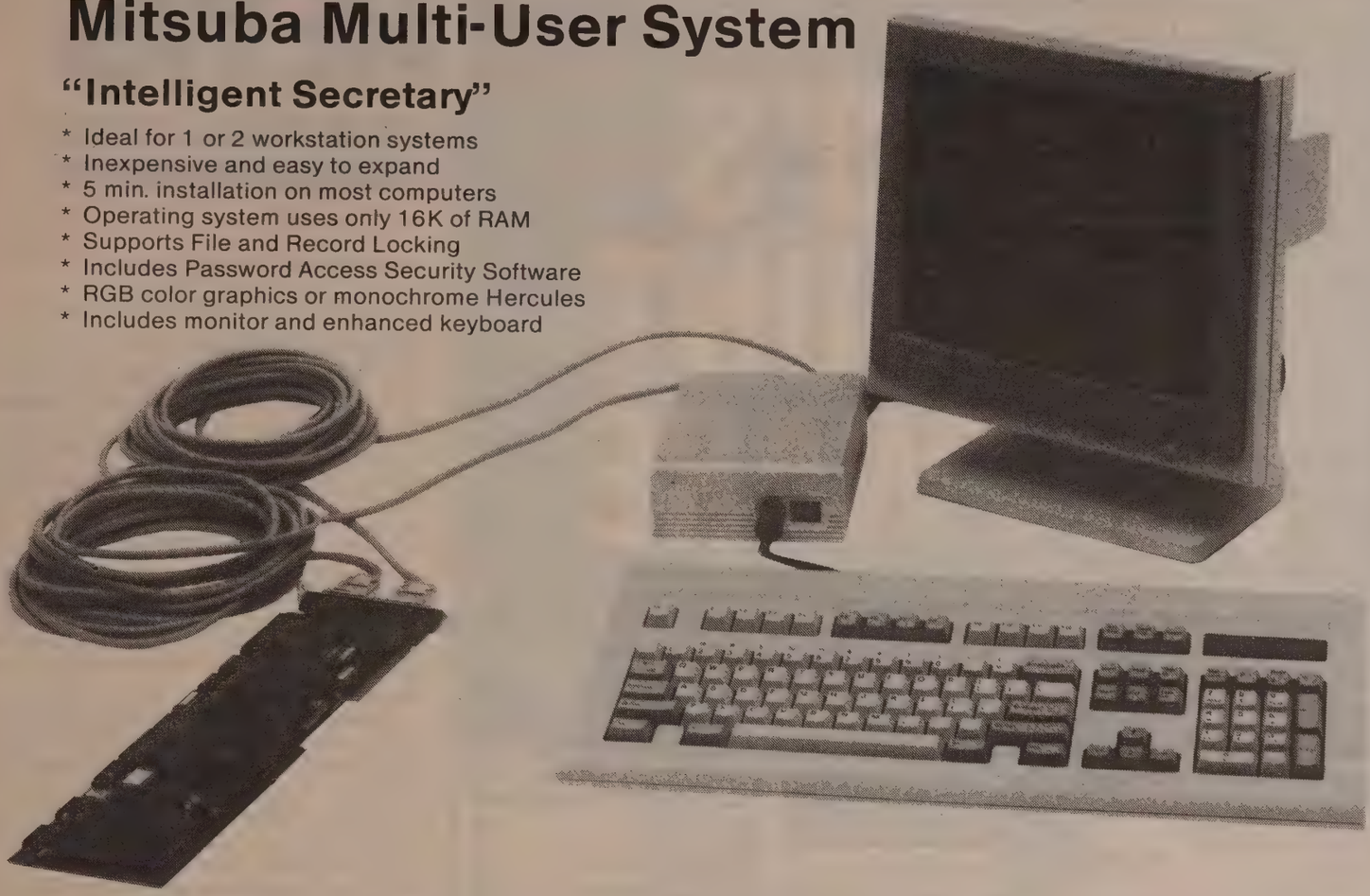
Philips Patent On Video Games Upheld Against Mediagenic

Days after changing its name, Mediagenic may wish that it could change its history. North American Philips Corporation's patent on video cartridge action games was upheld in the U. S. Circuit Court in a case against Mediagenic of Menlo Park (formerly Activision). The patent, a lucrative legal weapon in the cartridge-game software market, gives Sanders Associates, now part of North American Philips, the exclusive right to sell cartridges in which particular game actions take place. North American Philips has been very successful in defending its patent against other game manufacturers, and has made a great deal of money on licensing the patent to others in the game market.

Mitsuba Multi-User System

"Intelligent Secretary"

* Ideal for 1 or 2 workstation systems
* Inexpensive and easy to expand
* 5 min. installation on most computers
* Operating system uses only 16K of RAM
* Supports File and Record Locking
* Includes Password Access Security Software
* RGB color graphics or monochrome Hercules
* Includes monitor and enhanced keyboard



Have you ever wished to expand your present PC with a multi-user system in the simplest, most economical way, that fits your budget and your LAN requirements? ***Mitsuba*** provides the perfect solution; the ***Intelligent Secretary Multi-User System.***

The Intelligent Secretary is a revolutionary multi-user system that offers easy operation; you will have nothing new to learn if you already know DOS. The system is fully compatible with IBM PC/XT, AT, 386, or compatible machines. It runs all popular PC software on the market, including RAM resident programs. ***Access Security, File Lock,*** and ***Record Lock*** are all standard features of the ***O-DOS*** operating system software, which is packaged with the Intelligent Secretary System. The Access Security System allows the System Administrator to set up to 50 user passwords. Every subdirectory can be assigned to be ***Read and Write, Read Only,*** or ***Hidden with No Access*** for each password through an easy to use menu driven program.

The O-DOS operating system lays transparent on top of DOS and manages the multi-user environment, yet occupies only 16K of RAM. The O-DOS software can support up to nine stations including the host computer, and each workstation can be as far as 200 feet away from the host without sacrificing signal quality. Each unit can have it's own AUTOEXEC. BAT and CONFIG. SYS files, independent to the host system. The Intelligent Secretary System can also be easily integrated into any PC-NET or Novell based network system.

Each workstation has it's own serial and parallel port. Users can switch to any printer or peripheral on the system by a one-touch command. The user of the host computer can also access the serial and parallel ports at the remote workstation.

Using the Mitsuba ***M710A*** or ***M710C*** monitor and enhanced keyboard instead of a terminal, the Intelligent Secretary is the only multi-user system on the market that offers Hercules resolution or color graphics for your spread sheet and CAD/CAM graphic software. Due to the multi-CPU design, the processing speed will not be reduced when several users are operating at the same time, and the Norton Utility Test shows that the system is always 2.3 times faster than the IBM PC, no matter how many users are on the system.

SALE **Get *60 MB* for *FREE.***

Archive Tape Back-Up Units

The NEW 120 MB system is now available. For a limited time, you can purchase this higher capacity unit at the same cost as a 60 MB unit.

EGA Package

Get the Mitsuba M710E EGA monitor and a 640 x 480 high resolution EGA card with 132 column drivers at a special package price. Call for details.

Mitsuba

A NAME TO REMEMBER

Mitsuba Corporation
130 Produce Avenue #b
South San Francisco, CA 94080
(415) 871-0777

NORTHERN CALIFORNIA'S LARGEST COMPUTER SOFTWARE LIQUIDATOR IS RIGHT HERE IN FREMONT!

HERB'S DISCOUNT SOFTWARE

OPEN TO THE PUBLIC - 7 DAYS A WEEK
MON.-SAT., 10 am. to 6 pm., Sun, Noon to 4 pm

★ CURRENT VERSIONS AND "OLDIES" ★ 100'S OF TITLES FROM TOP SOFTWARE PRODUCERS
★ LOWEST PRICES ANYWHERE ★ NEW SELECTIONS WEEKLY

HERE'S A SAMPLE OF THIS WEEK'S SAVINGS

IBM SAVINGS

DAC EASY BONUS PACK
Complete Accounting System including Payroll & Tutors. List $149.95 ..... $75.00

MONEYMATE
Organizes Personal Finances. Was $99.50 ..... $37.50

FIRST PUBLISHER by PFS
Top Selling Desktop Publishing Pkg. List $99.00 ..... $65.00

FIRST CHOICE by PFS
New Version! Word Processor • Graphics • File Mgt. • Thesaurus & Spell Checker • Communications • Spreadsheet. List $149.00 ..... $75.00

PFS PROFESSIONAL PLAN 75.00
PFS PROFESSIONAL WRITE 95.00
PFS PROFESSIONAL NETWORK 55.00
HARVARD GRAPHICS (Ver. 2.0) 195.00
HARVARD PRESENTATION GRAPHICS (Ver. A.02) 80.00
HARVARD TOTAL PROJECT MGR II (Ver. 2.01) 195.00
HARVARD PROFESSIONAL PUBLISHER $150.00

CORNERSTORE 34.50
D.O.S. WORKS 22.50
BANK ST. WRITER PLUS 49.50
PRINT SHOP COMPANION 32.50
WORD WRITER PC (TIMEWORKS) 37.50
PORTFOLIO MGR. 19.50
PRACTIWORD 10.00
INTEPERT 15.00
INTEPLAN 15.00
INTEMATE 15.00
INTECALC 15.00
RGRAPH 12.50
RAGS TO RICHES (SALES) 10.00

ENTERTAINMENT

GUNSHIP 28.50
ACE OF ACES 16.50
DESTROYER 22.50
SILENT SERVICE 19.50
THE PRESIDENT IS MISSING 19.50
CHAMPIONSHIP GOLF 22.50
CHUCK YEAGER ADV. FLIGHT TRAINER 26.50
AMAZON 12.50
PINBALL WIZARD 19.50
WORD ATTACK 19.50
PLUS MANY, MANY MORE ..... FROM 5.00

C-64 - 128 SPECIALS

$4.50 EACH ANY 3 FOR $10.00
FAST EDDIE, KING CRIBBAGE, TOY BIZARRE, GO BEAM RIDER, ZAXXON, PITFALL II, ZENJI, DESIGNERS PENCIL, PLUS MANY MORE.

3 FOR $20.00 TABLE INCLUDES:
PITFALL, HARDBALL, PSI 5 TRADING CO., SUMMER GAMES, WORLD'S GREATEST FOOTBALL GAME, MOVIE MONSTER, WORLD GAMES, KARATE, CHAMPIONSHIP WRESTLING, CREATE A CALENDAR, AND MORE!

DESTROYER 19.50
SARGON III 19.50
F-15 STRIKE EAGLE 22.50
FLIGHT SIMULATOR II 24.50
GUNSHIP 22.50
A.C.E. 2 ..... 12.50
PHANTASIE II 19.50
ROGUE TROOPER 11.50
PEGASUS 19.50
INFILTRATOR 19.50
HUEY 9.50
LOGO 22.50
CHERONOBYL 12.50
HACKER 12.50
BAZOOKA BILL 11.50
CHESS 7.50
STAR RANK BOXING 9.50
OVER 200 TITLES COMPARABLY PRICED

IMPACT PRINTER FOR C-64 $14.50
COMPLETE WITH PAPER, RIBBON, POWER SUPPLY NOTHING MORE NEEDED.

JOYSTICKS
FOR IBM 17.50
COMMODRE/AMEGA/ATARI ..... 7.50 & 11.50
APPLE 22.50

MOUSE PADS 5.00

MAC

JAZZ 59.50
MACDRAW 57.50
MACTERMINAL 37.50
MACFORTH LEVELS 1&2 ..... 49.50
CRUNCH 20.00
DB MASTER 49.50
WORDHANDLER 20.00
1ST BASE 20.00
MICROSOFT FILE 75.00
DA VINCI INTERIORS 12.50
DA VINCI LANDSCAPES 12.50
DOW JONES 12.50
MIND PROBER 9.50
SPACE QUEST 24.50
KING'S QUEST 1,2 & 3 ..... 24.50 EA.
SUSPECT 14.50
BALLYHOO 14.50
MOONMIST 14.50
MGT. EDGE 22.50
SALES EDGE 22.50
COMMUNICATION EDGE 22.50
NEGOTIATION EDGE 22.50
ALL FOUR 75.00
AND MUCH MORE

MEMOREX COMPUTER PAPER
250 Data Quality Continuous Sheets 8½"x11" 15 Lb. Bond ..... Per Pk. $2.00

APPLE REDUCTIONS

$4.50 EACH 3 FOR 10.00
BARMATE, NUMEROLOGY, ALIEN AMBUSH, WAYOUT, SPACE GAMES, CARDWARE, SPACE ARK, BOARD GAMES, ARCADE GAMES, WILD WEST, AND MORE!

3 FOR 20.00 TABLE
FINANCE MANAGER, OIL BARONS, DOW JONES, TREND SPOTTER, KARATE, HACKER, SUN DOG, HARDBALL, TEMPLE OF APSHAI, MIND PROER, MIND OVER MINORS, PRACTICAL II, MASTER TYPE, AND MORE!

ENTERTAINMENT

MINDSHADOW 9.50
INCA 9.50
FIGHT NIGHT 9.50
MASTER OF THE LAMPS 9.50
ALTER EGO 17.50
CUTTHROATS 14.50
MEGA-BOTS 12.50
RAMBO 19.50
SKYFOX 9.50
SUB BATTLE 19.50
DAWN TREADER 11.50
WINTER GAMES 14.50

PLUS

PFS WORKMATES 50.00
NETWORTH 19.50
DB MASTER 19.50
CERTIFIED PERSONAL ACCT. 25.00
BETTER WORKING SPREADSHEET 28.50
PRINT SHOP GRAPHICS LIBRARIES 16.50
S.A.T. 26.50
MICRO SPEED READ 39.50
TOO MUCH TO LIST!!!

ATARI 8-BIT BLOWOUT

400/800/1200
CARTRIDGES AND DISKS
OVER 50 TITLES
4.50 EACH 3 FOR 10.00
ALL ATARI CASSETTES 99¢

ATARI-ST
JUST BEGINNING TO ARRIVE!
SEVERAL TITLES 14.50 UP

AMIGA VALUES

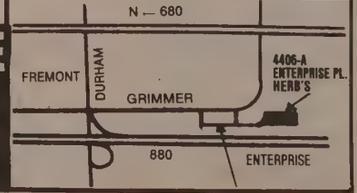
MI AMIGA FILE II 24.50
MI AMIGA LEDGER 24.50
BALLYHOO 14.50
MOON MIST 11.50
TRINITY 14.50
HOLLYWOOD 16.50
WITNESS 14.50
MINDSHADOW 14.50
HACKER 14.50
PRINTMASTER PLUS 29.50
GRAPHIC CRAFT 25.00
BUREAUCRACY 14.50

VIC-20 CARTRIDGE

CLOSEOUT ..... 99¢ ea.

QUANTITIES LIMITED SUBJECT TO STOCK ON HAND

HERB'S DISCOUNT SOFTWARE
4406-A. ENTERPRISE PLACE
FREMONT (415) 490-6335
OPEN DAILY



NEWS AND ANALYSIS

New Three-Dimensional Graphics Specification Gains Industry Support

Pixar, a San Rafael spin-off from the LucasFilm technical empire, recently announced a scene-description interface which allows many vendors to create graphics that can be displayed in standard fashion. The RenderMan standard is meant to bring order to the current chaos in the 3-D graphics market. It consists of descriptions of scene rendering and shading that can be easily adapted to the entire range of display hardware. At the announcement, major software companies like AutoDesk, Walt Disney, Industrial Light and Magic, and Pacific Data Images joined major graphics hardware vendors like Sun, DEC, Apollo and Prime in supporting the standard.

The standard should help push forward the state of the art in 3-D graphics, according to Pixar. As people become more and more accustomed to realistic scenes in animation and video presentations (called "photorealism"), the market for systems has become more competitive, and many manufacturers have developed proprietary interfaces. RenderMan allows programmers and designers to create images that can easily be moved to other systems that use RenderMan, thus making the user less reliant on a single vendor. Pixar hopes that RenderMan will become to 3-D modeling what PostScript has become for desktop publishing: a catalyst as well as an open standard. Pixar will supply interfaces to the C language and intends to create other language interfaces in the future.

The RenderMan specification is available to developers free of charge from Pixar. In an interesting legal move to avoid the problems Adobe has faced with its PostScript language, Pixar has copyrighted the specification and trademarked the RenderMan name; however, they will license the specification and trademark for free to anyone whose products meet the specification. Pixar believes that this will help control the growth of specification without restricting people from adhering to it. Pixar, 415/258-8100.

Small Game Company Sues Electronic Arts For Anti-Competitive Practices

Bethesda Softworks, creators of the *GRIDIRON!* football software game, have sued Electronic Arts for breach of contract and deceit in their dealings. Bethesda Softworks had arranged for Electronic Arts to distribute *GRIDIRON!* and allowed Electronic Arts to use some of the portions of *GRIDIRON!* in the upcoming *John Madden Football* game.

The game developers claim that after Electronic Arts got them to agree not to develop *GRIDIRON!* for other machines, EA reneged on its distribution agreement and used Bethesda's technology for the *John Madden* game, to its own benefit. Electronic Arts terminated the marketing and development contract and refused to buy the number of copies of the program they had agreed to. The suit charges that Electronic Arts used predatory practices in eliminating Bethesda Software from the market.

ARCHITECTURE FOR THE 90'S

SHAPE OF THE FUTURE

THE EVEREX SYSTEM 386/20

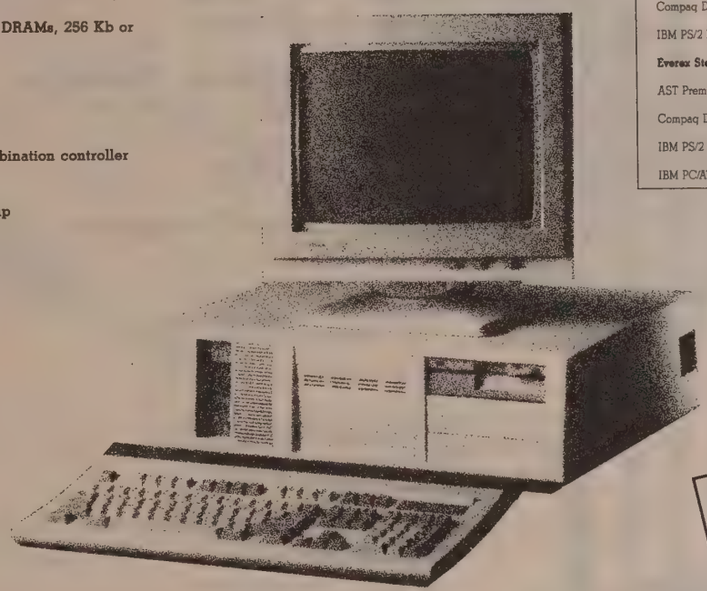
Features
- Fully compatible with the IBM® PC/AT™
- Intel® 80386 microprocessor, running at speeds of 20, 10, 6.7 MHz with zero wait states. (16 and 8 MHz on the 386/16)
- Speed-selectable by keyboard, software or front-panel switch
- The bus operates at 10 or 6.7 MHz
- The machine uses write-back cache memory (64K, 128K or 256K of 25 ns static RAM)
- Socket for an 80387 math coprocessor option, running synchronously at 20, 10 or 6.7 MHz. (16 and 8 MHz on the 386/16)
- 1 Megabyte DRAM expandable to 8 Megabytes on the system board (120 ns DRAMs, 256 Kb or 1 Mb)
- Front panel LEDs for power-on, disk access and speed indication
- Alpha-numeric realtime diagnostic display (8-digit)
- 1.2 MB floppy diskette drive
- Six 16-bit and two 8-bit bus expansion slots
- One 32-bit memory expansion slot
- Special Everex very high performance (1:1 interleave) hard disk/floppy combination controller
- Front access to up 6 to 5 half-height mass storage devices
- Enhanced 101-key keyboard
- System clock/calendar/configuration data in CMOS RAM with battery backup
- Everex enhanced BIOS
- Easy-to-use SETUP utility in ROM, supports over 45 drive types
- BIOS supports 3.5" 7270K diskette drives
- Front panel keylock to disable keyboard
- Front access reset switch
- Speaker enable/disable switch
- Complete, easy to follow user manual
- UL listed power supply; switchable 120240 VAC
- 13 months on-site warranty
- 1 serial and 1 parallel port

COMPATIBILITY TESTING RESULTS
The Everex System 386 has been evaluated by XXCAL, an independent third-party testing house. The test objective, as stated in XXCAL's report of February 16, 1988, was "to reveal any problems or inconsistencies relative to a selected group of off-the-shelf commercial software, networks, and peripheral products" on the Everex System 386. XXCAL's technicians "installed each application per documentation...[then] tested all functions, commands, and options directly related to a successful and thorough test of the product."

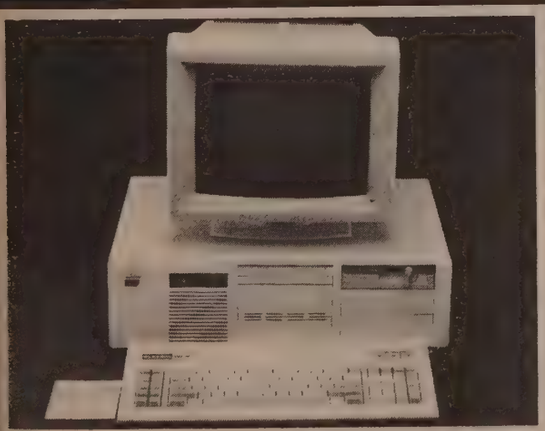
COMPETITIVE BENCHMARK TESTING RESULTS

Based on in-house testing, Everex Computer Systems Division has compiled the following benchmark test results:

Computer System	MIPS	Landmark	Norton SI Advanced
Everex Step 386/20	**4.91**	**35.0**	**24.3**
Compaq Deskpro 386/20	4.59	34.5	24.2
Everex Step 386/16	**3.93**	**27.3**	**19.5**
Everex Step 286/16	**3.27**	**21.4**	**18.4**
AST Premium 386/20	3.04	20.0	21.0
Wyse 386/16	2.98	20.6	17.6
Acer 386/16	2.99	20.6	16.2
Compaq Deskpro 386/16	2.90	20.0	17.6
IBM PS/2 Model 80, 16MHz	2.87	20.0	17.6
Everex Step 286/12	**2.45**	**15.9**	**13.7**
AST Premium 286/10	2.02	13.0	11.1
Compaq Deskpro 286/12	1.89	11.7	11.5
IBM PS/2 Models 50, 60	1.58	9.8	9.8
IBM PC/AT 8MHz	0.93	8.0	7.7



MADE IN USA



With a 3F 286 or 386 computer, you can do desktop publishing, word processing, process control, networking, database applications, accounting spreadsheets, inventory control, circuit design, computer aided design engineering and manufacturing, and architectural design—the list goes on!

These computers will also run with OS/2, MS OS/2, Lotus 123, Dbase III, Unix, Xenix, Informix, AutoCAD, Smarttalk, Q&A, Sidekick, Gem, Turbo Pascal, Multimate, Word, Wordperfect, Wordstar, Ventura, Novell Netware 286, IRMA board, Modems, Bernoulli boxes, Network Cards

OTHER EVEREX COMPUTERS

3F 286 System

- 80286 CPU
- 1.2MB Floppy
- 512K Memory
- 101 Keyboard
- FL/HD Controller
- 6/8/10 Keyboard Selectable
- 195 Watt Power Supply
- Optional 80287 Socket
- FCC UL Approved

8MHz '1' Wait State 80286 Mono System $990
10MHz '1' Wait State 80286 Mono System $1239
10MHz '0' Wait State 80286 Mono System $1339
12MHz '0' Wait State 80286 Mono System $1575
For an EGA System ..... add $350

3F 386 System

- 80386 CPU
- 1.2MB Floppy
- 1MB Memory
- 101 Keyboard
- FL/HD Controller
- 64K Cache
- 16MHz CPU '0' Wait State
- 195 Watt Power Supply

16MHz '0' Wait State 80386 Mono System $1975
For an EGA System $2299

Hard Disk add on for above Systems:
20MB 65ms $249
40MB 39ms $399
80MB 28ms $710
144MB 16.5ms $1995

PRICES AND AVAILABILITY SUBJECT TO CHANGE WITHOUT NOTICE.

Call Us For Full Line of EVEREX Peripheral Products.

We Also Carry Hard/Floppy Drives, Monitors, Printers, Motherboards and All Major Software.

3F

3F Associates, Inc.
44100 Old Warm Springs
Fremont, CA 94538

(415) 659-0403
FAX (415) 651-9190

At These Authorized KAYPRO Dealers

Wolf Computer
105 N. Santa Cruz Ave.
Los Gatos, CA 95030
(408) 354-1210

Knight & Day Computer
15715 S. Monterey St.
Morgan Hill, CA 95037
(408) 778-5740

Marfam Computer Solutions
5765 Winfield Blvd, Ste #3
San Jose, CA 95123
(408) 365-1588

Grand Central Computers
1110 Main St., Ste #8
Watsonville, CA 95076
(408) 722-9278

Top Notch Services
2004 Ocean St. Ext.
Santa Cruz, CA 95060
(408) 425-1425

Salinas Valley Computers
970 Park Row
Salinas, CA 93901
(408) 422-1355

Advantage Computer
3427 El Camino Real
Santa Clara, CA 95051
(408) 296-2243

Quement Electronics
1000 S. Bascom Ave.
San Jose, CA 95128
(408) 998-5900

Griffon Computer
412 E. Campbell Ave.
Campbell, CA 95008
(408) 370-2626

EXL, Inc.
140 Martinvale Lane
San Jose, CA 95119
(408) 281-9448

Computer Center of Santa Cruz
740 Front Street #115
Santa Cruz, CA 95060
(408) 458-1644

The Computer Store
429 Castro St.
Mountain View, CA 94041
(415) 968-3466

The Computer Store
5000 Geary Blvd.
San Francisco, CA 94118
(415) 387-PCPC (7272)

Computer Age-San Mateo
2199 S. El Camino Real
San Mateo, CA 94403
(415) 348-2667

Professional Computer Mgt.
843 Howard St.
San Francisco, CA 94103
(415) 546-3833

ECX Computers
2678 N. Main St.
Walnut Creek, CA 94596
(415) 944-9277

Computer Insights
40961 Grimmer Blvd.
Fremont, CA 94538
(415) 490-0685

F&M Compserve
330 Broadway, Ste #3
Vallejo, CA 94590
(707) 554-4565

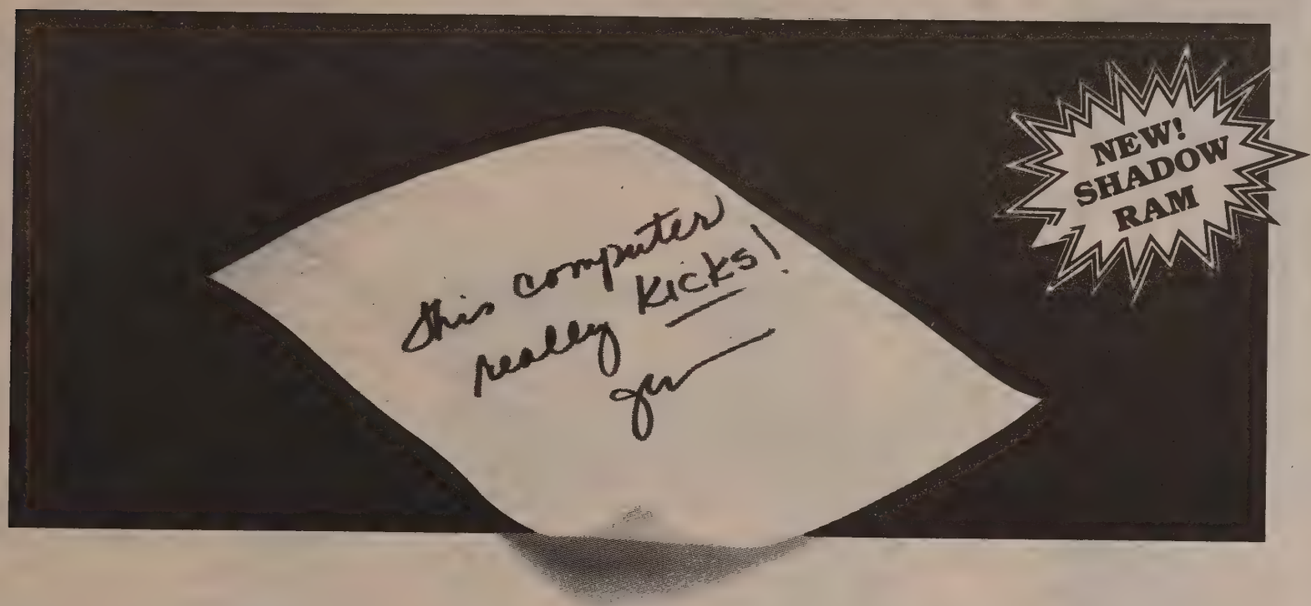
Empire Computers
206 4th St.
Santa Rosa, CA 95401
(707) 526-4106

Computer Warehouse
6022 Fair Oaks Blvd.
Carmichael, CA 95608
(916) 971-9812

Placerville Computer Services
681 Main St., Ste #101
Placerville, CA 95667
(916) 621-1221

Computer Products Unlimited
4100 Cameron Park Dr. #111
Cameron Park, CA 95682
(916) 677-6226

World's Fastest 286! From KAYPRO



"Of All the Comments We've Received on the Kaypro 286, this is the One We Like Best."

It's a fact. The KAYPRO 286 kicks...and kicks out all your old assumptions about the cost of truly advanced technology. Consider this.

At its top speed of 16 MHz, the KAYPRO 286 is faster, yet less expensive than most standard 386 systems.* And with the OS/2-compatible KAYPRO 286, adapting to rapidly changing standards doesn't mean reinventing the wheel.

Card-based system components – including the 80286 CPU – provide the ultimate in built-in non-obsolescence. Don't play catch up. Keep up with the better power machine...the "Best Buy" KAYPRO 286.

Your Authorized Kaypro Dealer is ready to give you all the details about the complete line of Kaypro desktop and laptop computers – and Kaypro's outstanding Credit and Leasing.

1 (800) 4KAYPRO

■ 8/10/16 MHz ■ OS/2 Compatible
■ 40 MB Hard Disk ■ 1 MB RAM ■ WordStar 4.0

Kaypro's Revolving Charge & Commercial Leasing

*Norton S.I. of 15.3 to 18.0. Also available with 12-MHz
Trademarks: OS/2 International Business Machines. WordStar Professional Release 4.0 MicroPro International

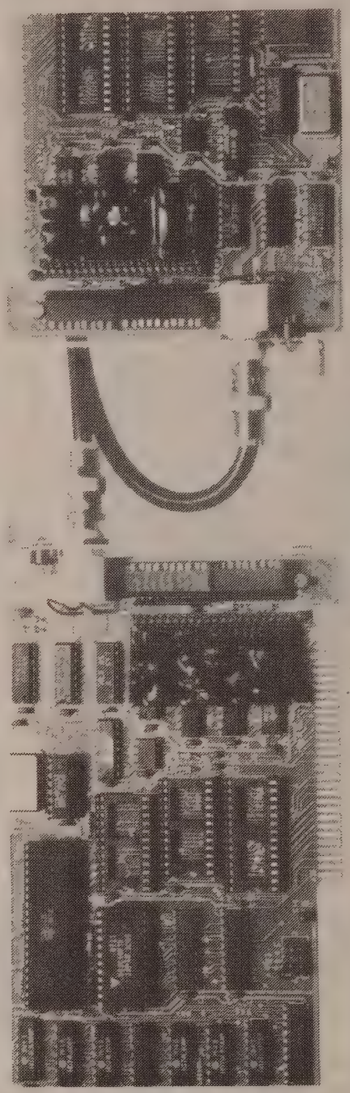
KAYPRO CARD

KAYPRO®
COMPUTERS
The Future's Built In

KAYPRO Lease-Link

LOCAL AREA NETWORK

Edimax Computer - LAN Professional

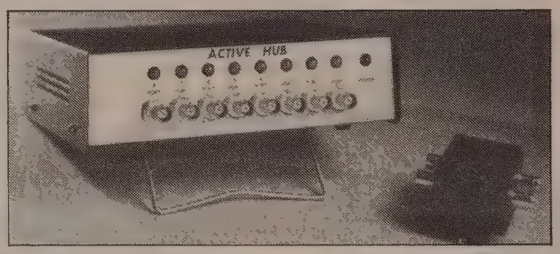


ARCNET
- Diagnostic LED
- Dip Switch on Rear Bracket for Easy Installation
- Half-Sized Card
- 8253 Programmable Timer Socket
- 2K Data Packet Buffer

8-PORT ACTIVE HUB
- Compact Case Design With Adjustable Leg
- Diagnostic LED on Each Port
- 110/220 V Switchable
- External Replaceable Fuse

4-PORT PASSIVE HUB
- Solid Case With Two Chained Terminators

ETHERNET
- IEEE 802.3 CSMA/CD Protocol
- Dip Switch on Rear Bracket for Easy Installation
- 10 Megabits Transmission Speed
- CMOS VLSI Design
- Novell NE-10000 Compatible



ARCNET CARD (STAR TOPOLOGY) . . . $99

ARCNET CARD (BUS TOPOLOGY) $125

ACTIVE HUB $250

PASSIVE HUB $25

ETHERNET CARD. . . . $180

CALL FOR EVEN BETTER Q'TY PRICE!!

EDIMAX COMPUTER COMPANY

LAN PROFESSIONAL
3020 SCOTT BLVD.
SANTA CLARA, CA 95054
Mon-Fri: 9-5

(408) 496-1105
FAX: **(408) 980-1530**

BE IN THE KNOW— READ

California's Computer Magazine

MICROTIMES™

NEWS AND ANALYSIS

Borland Offers Paradox For OS/2

Strengthening the still-weak OS/2 market, Borland announced that *Paradox* is now also available in an OS/2 version that costs the same as the MS-DOS version, $725. The major advantages of the OS/2 version, according to Borland, are the vastly increased memory space and multi-tasking of processes. The increased memory capacity greatly reduces the disk accesses in memory-intensive operations. *Paradox* for OS/2 can share data with *Paradox* for MS-DOS, and can use data from the same network.

Borland hopes that the low upgrade price from the MS-DOS and 386 versions ($100) will cause many people to make the transition. Borland also announced that future versions of *Paradox* will take advantage of SQL technology.

Microsoft Announces A Slew Of Upgrades To Mac Products

Proving that they are not letting the Apple lawsuit get in the way of their applications development, Microsoft announced major upgrades to their line of Macintosh software with promises of new versions between now and this fall. The software upgrades all include full compatibility with Apple's MultiFinder, so that the Microsoft software can be run at the same time as other software on the Mac. Although many manufacturers are making their programs work with MultiFinder, Microsoft is aggressively adding features to allow its programs to perform most tasks in the background if selected.

Excel version 1.5 for the Mac, available now, gives the user more flexibility in customizing the dialog boxes and menus so custom programs can be set up effectively. It also supports color in charts on the Mac II, more chart types, more data points for charts, more macro and worksheet functions, and complete compatibility with macros on Excel for the PC. Recalculation can be performed in the background when running under MultiFinder. The price is $395, and upgrades from earlier versions are $25.

Word version 4 will included automatic repagination (a feature already in most other word processors), a new tables feature to make setting up tables much simpler, full WYSIWYG editing, absolute positioning so that text flows around graphics anywhere on the page, more customization of the menus, color text and graphics, a thesaurus and a macro program. The WYSIWYG editing will allow the user to edit multiple columns on the screen as well as header and footer text. The program will also allow users to quickly switch to other programs when running under MultiFinder. *Word* version 4 will continue to cost $395, and upgrades will be $50 or $75, depending on when the upgrade is ordered.

File version 2 revives an almost-dead product for Microsoft. The new version will have color capabilities, over 100 templates for labels and forms, a macro package for automating updating of data, added computation capabilities, and more advanced reporting facilities. *File* will also work more closely with *Word*'s form letter capabilities. It will cost $195 and the upgrade cost will be $50.

PowerPoint version 2 will fully support Mac II

WE DELIVER INSTALL SERVICE & TRAIN YOU

REPAIR & SERVICE
CALL FOR SERVICE CONTRACTS
Your Guaranteed #1 Source for Authorized Repair
FREE DELIVERY OF COMPUTERS IN SAN FRANCISCO

PLEASANT HILL
1527 Contra Costa Boulevard
Pleasant Hill, CA 94523
Off Hwy 680
Contra Costa Blvd Exit
(415) 682-8696
(415) 634-TOWN

SAN FRANCISCO
760 Market Street, Ste 219
(Phelan Bldg)
S.F., CA 94102
(415) 956-8696
(415) 956-TOWN
Fax (415) 989-TOWN
Mon-Fri 8-6, Sat 10-5

MOUNTAIN VIEW
2455M Old Middlefield Way
Mt. View, CA 94043
(415) 962-8696
(415) 962-TOWN
Mon-Fri 9-6, Sat 10-5

EPSON PRINTERS

Epson technology has long set the industry standard for computer printers. Epson's reliability and high performance are available in printers that offer remarkable value.

LQ 800
FX86E/FX 286E
LQ 500/LQ 800
LQ 1000/LQ 2500
LQ 850/LQ 1050
EX 800/EX 1000

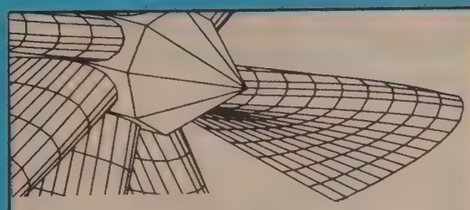
Zenith data systems

Zenith's new Z-183 20 MB laptop has a built-in hard drive powered rechargeable battery. So you can run it anywhere, anytime. The **Z-183** boasts 20 megabytes of hard disk storage; 640K of memory, and a 3½" floppy drive which can run most PC/XT compatible software. What's more, it features our top-rated blue, super-twist back-lit LCD screen.

Also available
Zenith 181
Zenith 183/20
Zenith Flat Screen Monitor
Zenith 1200/2400 Modem
Zenith 41/2 External Floppy
Authorized **Zenith** Dealer

New 286 Portable
In Stock

All Accessories in Stock!
Best Prices In Town!



INTRODUCING:
AUTOCAD
RELEASE 9

Featuring a new user interface with pull-down menus, icon menus, file portability across operating systems, twenty new text fonts, and more. We listen to our customers.

Authorized **AutoCAD** Dealer
AutoCAD is registered in U.S. Patent and Trademark Office by AutoDesk Inc.

AUTOCAD

AST PREMIUM 286/386
EXTRAVAGANZA

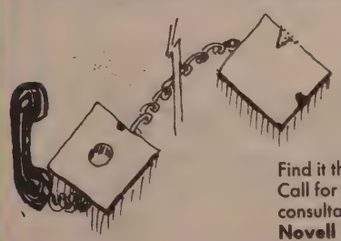
Models Available:
AST-40, 70 & 130
AST 286 10 MHZ 40 MB Full Mono System

Lowest Prices
Largest Stock
Best Selection

Now Authorized Dealer For AST Products

IN TOWN!

Networking & Modems
Novell & Hayes
9600 Baud V Series Modems



Have you been searching for the perfect link?

Find it through us and **Novell.** Call for estimate & consultation. Authorized **Novell** Dealer.

We Also Carry:

Toshiba Laptops	NEC
Samsung	Microsoft
Multitech Acer	Intel
Wyse	Iomega

DEALER FOR TOPS NETWORK
We are proud to be an Authorized Dealer

Novell	**Epson**
AutoCAD	**AST**
Zenith	**WYSE**

COMPUTOWN
"More Than A Computer Store"

ONE YEAR PARTS & LABOR WARRANTY ON COMPLETE SYSTEMS.
LOW, LOW COST PUBLIC DOMAIN SOFTWARE AVAILABLE

MAXBIT COMPUTER, INC.

HOURS: M-SAT. 10 AM-6:30 PM SUN. 11 AM-5:30 PM BEHIND MOBIL GAS STATION

STEVENS CREEK BLVD. / BOLLINGER / PROSPECT / STGA.-SVLE. RD. / BLANEY

ADD-ON CARD
XT MULTI I/O 55.00
AT I/O 55.00
RS-232 (SERIAL) CARD 24.00
NO SLOT CLOCK 34.00
GAME CARD 18.00
MONOGRAPHIC/PRINTER ... 45.00
COLORGRAPHICS/PRINTER . 45.00
EGA/PRINTER CARD 139.00
2.5 RAM CARD 79.00

HARD DRIVES
SEAGATE 20MB ST-225 ..... 215.00
SEAGATE 30MB ST-238 ..... 240.00
SEAGATE 40MB ST-251 ..... 399.00
OTHERS: KEYBOARD/MONITOR/POWER SUPPLY

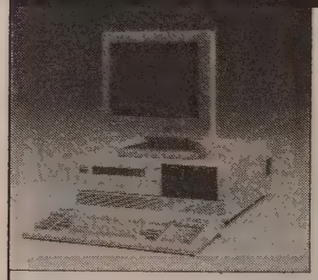
COMPLETE XT TURBO
• 256K RAM ON 640K M/B
• 4.77/8 MHZ TURBO
• 150 WATT POWER SUPPLY
• 360K FLOPPY DRIVE AND CONTROLLER
• MONOGRAPHIC CARD
• SERIAL PARALLEL/GAME PORT
• HIGH RESOLUTION MONITOR
• XT 84 KEYBOARD
• CLOCK/CALENDAR WITH BATTERY BACK-UP
$469.00 • 10MHZ XT TURBO $499.00

COMPLETE AT 10 MHZ 0 WAIT*
• 512K RAM ON 1MB M/B
• 6/10 MHZ 0 WAIT
• 220 WATT POWER SUPPLY
• 1.2MB FLOPPY DRIVE
• 1.2MB/360K F.D. CONTROLLER
• MONOGRAPHIC/PRINTER PORT
• HIGH RESOLUTION MONITOR
• AT/XT 84 KEYS KEYBOARD
• TWO SERIAL PORT (ONE OPTIONAL)
$829.00
12 MHz 0 WAIT 929.00

16 MHZ 0 WAIT 386 SYSTEM
• 1MB RAM ON BOARD
• 16MHZ 0 WAIT
• 220 WATT POWER SUPPLY
• HARD DISK/FLOPPY DRIVE CONTROLLER
• 1.2MB FLOPPY DRIVE
• SERIAL/PARALLEL PORT
• MONOGRAPHIC CARD/MONITOR
• 101 AT KEYBOARD
$1899.00
TOWER SYSTEM AVAILABLE..... $2149

1084 SARATOGA-SUNNYVALE RD., SAN JOSE • (408) — 446-3906

EVEREX



286/12
"The hottest 386 PC in the business...." With 12 MHz, 0 Wait State and AT compatibilty, you'll call it the perfect solution for all your business needs.
•12 MHz/8 MHz operation 0 Wait
•1 Meg Fast RAM •1.2 Mg Floppy
•40 MB Hard Disk •Everex EGA Monitor
$2245* *Complete 40 MB EGA System

FREE Surge Protecter

We Carry a Full Line of Everex Products

3282 El Camino Real
Santa Clara, Ca 95051
(408) 241-1210. Daily UPS

SCHWAB COMPUTER CENTER
"The Everex Store" An Authorized Dealer

We Accept

Hours 10-7 Mon-Fri
11-4 Sat.
Closed Sun.

BEST PRICES FOR ADD-ON CARDS & MOTHERBOARDS

MOTHER BOARD
386 MAIN BOARD (0K) (16 MHz) ..... CALL
TURBO MAIN BOARD (0K) (10 MHz) $75
TURBO MAIN BOARD (0K) (4.77/8 MHz, 2-LAYER) 70
BABY 286 MAIN BOARD (0K) (12 MHz 0 Wait) 299
286 MAIN BOARD (0K) (10MHz 0 Wait) 275
286 MAIN BOARD (0K) (12MHz 0 Wait) 299

XT SERIES
FLOPPY DISK CONTROLLER (2 Port) $19
384K MULTIFUNCTION CARD 65
I/O PLUS II 39
576K RAM CARD (0K) 25
MULTI-I/O CARD 50
RS-232 SERIAL CARD 25
KEYBOARDS/CASES/P. SUPPLY ..... CALL

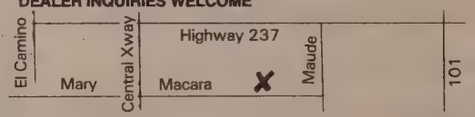
BUILD YOUR OWN 8088/286/386
CALL FOR PRICES & INFO

286 AT SERIES
2.5 Mb RAM CARD (0K) W/EMS SOFTWARE $80
3 MB MULTIFUNCTION (0K) W/EMS SOFTWARE 120
AT I/O CARD (S.P.G.) 45

286/8088 SERIES
FLOPPY DISK CONTROLLER (360K/720K/1.2M) $38
CGA/MDA/PRINTER 45
PRINTER CARD 15
MONO/GRAPHIC/PRINTER 45
MGP + FDC (1.2M/360K) 67
EGA + I/O 155
EGA CARD 125
COLOR/MONO/PRINTER 55

DEALER INQUIRIES WELCOME

SUMMIT MICRO DESIGN
479 Macara Ave. Suite 803
Sunnyvale, CA 94086
Tel: (408) 739-6349
Fax: (408) 739-4643
Dealer Inquiries Welcome
2 blocks East of Mary & Central Expway Mon-Fri 9-6 Sat 10-5



SUBSCRIBE

Keep up with California computer news!

California has needed a magazine for computer users and MicroTimes is it!

If you're having trouble finding MicroTimes in your area, get your own personal copy delivered by mail.

MICROTIMES

Send Me The Next 12 Issues For $24 (Allow 3 to 4 weeks for delivery) In Mexico & Canada $40 Overseas (surface mail) $40.
☐ cash enclosed ☐ charge card
Visa/Mastercard # _____
Expires _____
Signature _____
Name (please print) _____
Address _____
City _____ State _____ Zip _____
Edition ☐ Bay Area ☐ L.A.
Mail to: MicroTimes Subscriptions
5951 Canning Street
Oakland, CA 94609

NEWS AND ANALYSIS

color, and include a spelling checker, find-and-replace commands for universal changes in presentations, an extensive template library and support for encapsulated PostScript from Adobe *Illustrator* and Aldus *FreeHand*. The program also more fully supports 35mm slide manufacturers. Microsoft will also provide a disk of presentation fonts up to 96 points. The program will cost $395 and the upgrade cost is $40.

Chip Maker Announces RISC Chip To Speed PostScript Output

Weitek, a major manufacturer of custom chips, has introduced a set of reduced instruction set computer (RISC) processor chips to allow printer manufacturers to make much faster PostScript printers. The HyperScript processors are optimized for handling page printing at high rates, especially in printers designed for PostScript. Manufacturers using these chips will be able to produce lower-cost printers due to the reduction in cost of the processing portion of the print controller.

Weitek will supply its PostScript-compatible driver software with the chips, and other driver manufacturers are adapting their software to work with the HyperScript chips. Bitstream Fontware, the major supplier of scalable fonts outside of Adobe, is available for the PostScript compatible drivers. Although Weitek has competition in this market, it is likely to make quick inroads due to its size and reputation. Due to the proliferation of chips like the HyperScript processor, the cost of fast PostScript printers may drop significantly by the middle of next year; however, the RAM chip shortage could boost the prices back up. Weitek, 408/738-8400.

Hewlett-Packard To Market Zenith Portable

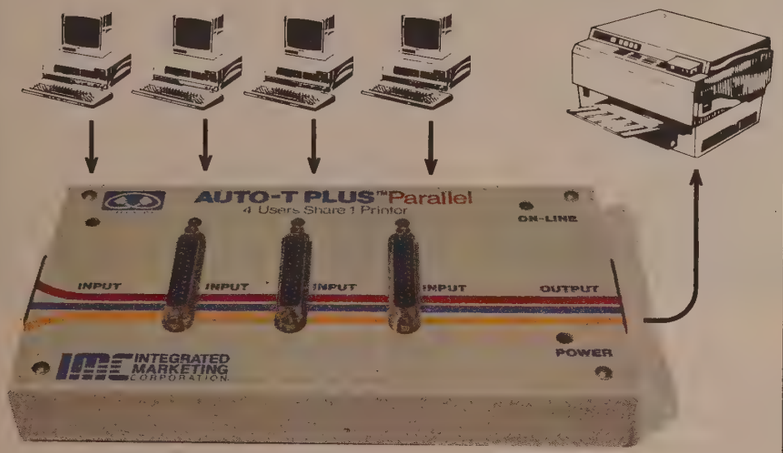
Breaking away from the "must-be-made-here" mentality, Hewlett-Packard has decided to market a revised version of the popular Supersport 286 portable computer with the Hewlett-Packard label. Hewlett-Packard has been largely unsuccessful in the laptop and portable market due to higher prices for the machines it has introduced so far. By using Zenith's lower-cost technology, Hewlett-Packard can reduce the price of the models it sells and establish itself in a better price/performance marketplace. The two companies have worked together over the years on many government contracts, with Zenith supplying personal computers and Hewlett-Packard supplying peripherals and minicomputers, and the agreement may lead to other co-marketing and co-manufacturing arrangements.

HyperCard CD-ROM Edition Of The Whole Earth Catalog Due

Brøderbund Software will be releasing a CD-ROM containing the electronic edition of the *Whole Earth Catalog* that will be the first major CD-ROM *HyperCard* stack on the market. The stack will contain text, graphics and sound, and will have all of the

THE FASTEST PERIPHERAL SHARING DEVICE IN THE WORLD*!!!

AUTO-T PLUS



4 USERS SHARE 1 PRINTER
Serial or Parallel

...with Softspool

WORK WHILE YOU PRINT...
Softspool™ prints "in the background" so you can keep working while Softspool™ handles the printing.

PLUG 'n PLAY SOFTWARE...
Nothing to learn—just load Softspool™ onto your system and never worry about it again.

FASTER PRINTING...
Softspool™ supports 'super fast' baud rates like 19.2K baud, so you can run your serial port at top speed for faster printing.

UNLIMITED BUFFER SIZE...
Softspool™ buffers to hard disk so you can make your printer buffer as large as you like.

PRINT TO DISK FILE...
With Softspool™ you can capture a print job and save it to disk for later use.

PRINT MULTIPLE COPIES AUTOMATICALLY...
While you work, Softspool™ will print up to 255 collated copies of any print job.

MADE IN U.S.A.

$500 Value For $149*

*Introductory price. Suggested Retail: $195.

Now, there is an alternative to printer sharing devices costing $500 or more: The Auto-T Plus with Softspool.

Transparent to the user and easy to install, the Auto-T Plus cost per user is little more than the price of a cable – yet offers features found only in costly buffered devices.

***Time To Buffer 200K Graphics Job 15 Seconds!!!**

Fry's Electronics
541 Lakeside Drive
SUNNYVALE
(408) 733-1770

ERA Electronics
33 Maiden Lane
SAN FRANCISCO
(415) 398-1174

ERA Electronics
4500 El Camino Real
LOS ALTOS
(415) 948-4500

ERA Electronics
4000 Pimlico Drive
PLEASANTON
(415) 463-8833

WOLF Computers
105 N. Santa Cruz Avenue
LOS GATOS
(408) 354-1210

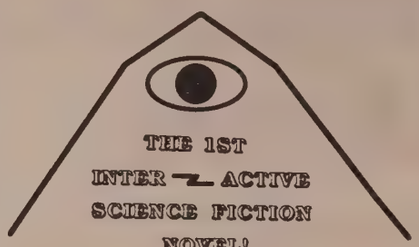
Call for Local Dealer.
OEM & Corporate Inquiries Welcomed.

800-537-5999

Integrated Marketing Corporation
INTERFACE TOOLS

1031H East Duane Avenue, Sunnyvale, CA 94086
Telephone: (408) 730-1112
Telex: 5106018576 FAX: (408) 730-1452

Manufacturing & Marketing of "Interface Tools."



ZYGOT is a text adventure game that starts you off on the greatest adventure of your life! Use it with your word processor to help construct the next great **sci-fi novel.** The game starts you off with the characters - setting, dialogue, chapter outlines etc.
The rest is up to your
IMAGINATION!
You will be paid royalties on the finished product based on the number of **YOUR WORDS WE ACTUALLY USE** in a book (or books) published by us on a pro-rata share basis. You could ***earn millions*** based on your input into this FUN NEW PROGRAM. Contract & complete instructions are included.

ZYGOT is the future of Mankind. Zygot is the next genetic version of Human Being. Zygot is the conquest of ***Space/Time.*** ZYGOT is you, your thoughts, emotions, memories linked with thousands of others in a gravity bottle and is **your** answer to ***STAR WARS*** ZYGOT is happening now! ***ATTACH-NOW,*** or be compiled later!

DO IT NOW!
SEND $9.95 TO:
MILLENNIUM PRESS
P.O. BOX 7885
SANTA CRUZ, CA 95061
OR CALL (408) 476-7126
VISA - MASTERCARD - AM-EXPRESS
SPECIFY COMPUTER TYPE

NEWS AND ANALYSIS

AND ANALYSIS

information from the printed version of the *Whole Earth Catalog* as well as additional items such as music samples and additional graphics. The information on the CD-ROM is heavily cross-referenced with links between related topics and authors. This disk is the first CD-ROM from Brøderbund, who hopes to release other disks in the future when the CD-ROM market matures. The *Whole Earth Catalog* has sold over 2.5 million copies of its many editions over the past 20 years, and the Point Foundation, its publishers, hope that the CD-ROM version will reach a new audience for the catalog. The stack requires a Macintosh running *HyperCard* and an AppleCD SC player or compatible. Brøderbund, 415/492-3200.

Apple Releases New Version Of HyperCard

HyperCard version 1.2 gives programmers more capabilities to create large stacks and lets users read stacks that are stored for reading only. The new version has special support for the AppleCD SC CD-ROM drive as well as the AppleShare network and other networks that allow protection of files.

Programmers working with HyperTalk, the programming language internal to *HyperCard*, will find many new programming features that help speed the stack development process. There are also new features in the search command and new keyboard commands. Apple is making this new version of *HyperCard* a free upgrade to anyone who has a copy of earlier versions of *HyperCard*.

Ziff Announces CD-ROM Version Of Many Magazines

Computer Library, the first consumer-oriented CD-ROM subscription service, will contain the full text of ten leading magazines and abstracts of over 110 others. Subscribers to the Computer Library will get the full text of *PC Magazine, PC Week, PC Tech Journal, MacUser, Government Computer News, Microsoft Systems Journal, A+ Magazine, Digital Review,* and the *Communications of the ACM* (other full-text magazines are scheduled for inclusion later in the year).

The abstracted magazines include almost every computer-related magazine available in this country. Computer Library comes with Lotus' BlueFish information retrieval software, which runs only on the IBM PC, although Ziff intends to make a Macintosh version of the Computer Library available in the future. The subscription is not cheap ($695 a year), but the full-text retrieval of major magazines could be invaluable to many researchers and market analysts. Since the CD-ROM player market is not very large, Ziff is offering CD-ROM drives for $635 to subscribers. Ziff Communications, 212/503-4400.

Sony To Upgrade NEWS Workstations To Dual 68030

Heralding the advent of major manufacturers using the 68030, Sony recently announced that the NEWS 1800 family of high-end UNIX workstations will have dual 68030 processors that will perform at 5.3 VAX MIPS (million instructions per second). The workstation will support a high-resolution monitor and the X-11 Window system from MIT, a 68882 floating point processor, and extensive I/O handling. The fast I/O is due to dedicating one of the 68030 processors to I/O processes. The base operating system software, SONY-OS, is based on UNIX 4.3 BSD. The NEWS workstation has rapidly become the most popular workstation in Japan, and, although it is relatively expensive, has become increasingly popular here in the computer-aided software engineering market. Sony Microsystems, 415/965-4492.

Novell Adds Macintosh To Novell NetWare

In a boost for the AppleShare network standard, Novell released NetWare 2.15, which allows Macintoshes to reside on Novell networks with PCs running MS-DOS and OS/2. Apple was especially happy at the announcement, since Novell has a large share of the PC network market.

NetWare for the Macintosh allows any Macintosh to connect to the Novell network and immediately share files. Macintosh programs that can use files from a AppleShare file server will be able to use the files on the Novell network. The program will be available this fall and will cost $200. Novell, 801/379-5900.

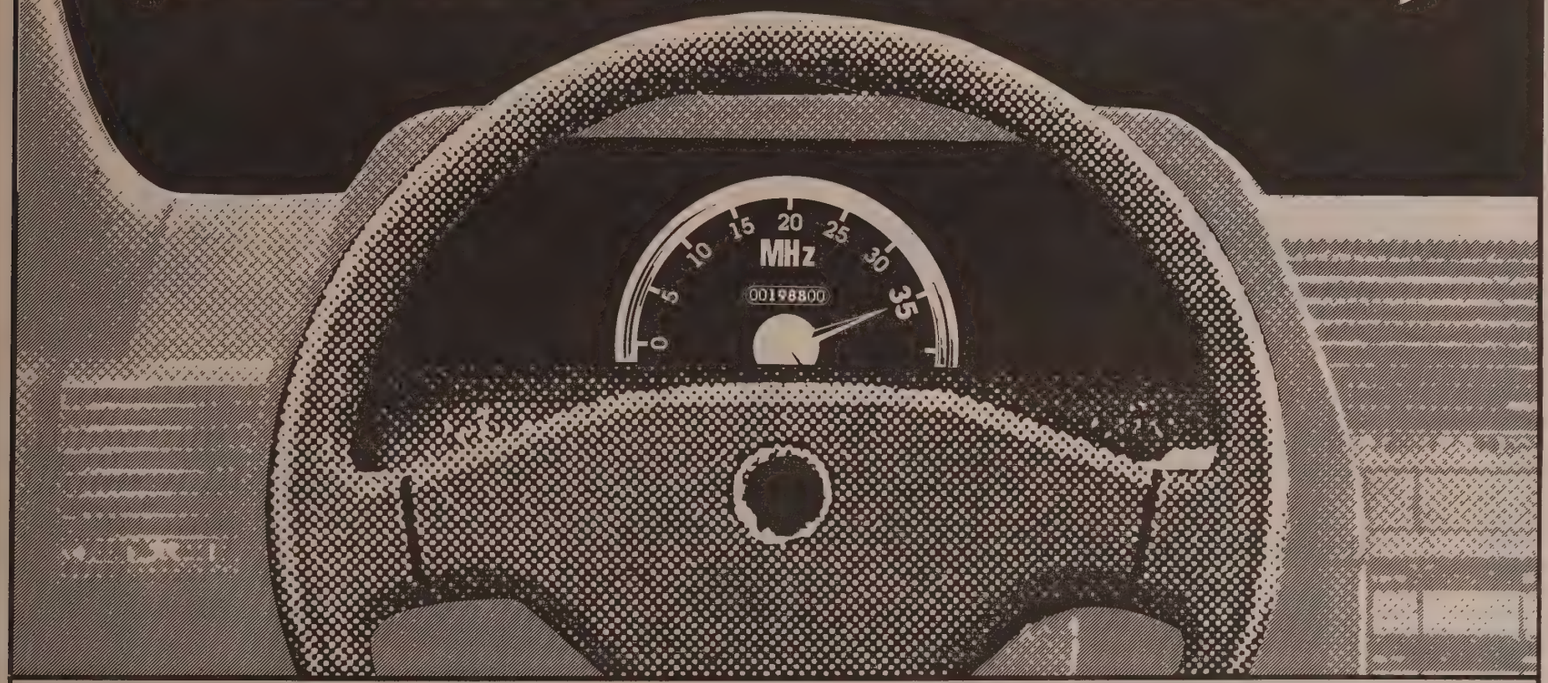
IBM Announces New PS/2 Computers And Options

A flurry of product announcements by IBM has bolstered its PS/2 product line at both the top and bottom ends. The Model 70 desktop computer is based on the powerful Intel 80386 chip and comes in three speeds: 25 MHz, 20 MHz, and 16 MHz. These will give IBM customers a wide range of choices for 80386-based computers.

In the mid-range, the Model 50 Z improves on the earlier Model 50 by adding much faster RAM memory for an increase in overall speed of 35%. Since IBM produces its own memory chips, it will not be affected by the current RAM shortage that is plaguing other manufacturers. IBM also announced a new low-end machine, the Model 25 LS, which is targeted at offices that have token-ring networks already in place. The Model 25 LS has a single floppy drive and a token-ring card so that it can access data off of the network. At the same time, IBM dropped the prices on many of its high-end PS/2s.

Not to be left out of the announcements, Microsoft also announced that people purchasing Model 25s from an IBM Authorized Dealer will qualify for a free copy of Microsoft *Works*. *Works*, Microsoft's low-end all-in-one package, has become a popular item with many people who mostly use their PCs to hook up to mainframes, since it gives them many of the capabilities of individual packages without making them buy (and decide on) many purchases. Model 25s sold by IBM Authorized Dealers will come with coupons for *Works*; users send the coupons to IBM to get the *Works* package. □

Now You Get The Speed (But Not The Ticket)



Everex System 386/20

- Fully compatible with IBM PC/AT
- Intel 80386 running at speeds of 20, 10, 6.7 MHz with 0 wait states. 16 & 8 MHz on the 386/16
- Machine use write-back cache memory (64K, 128K or 256K of 25 ns static RAM)
- Socket for an 80387 math coprocessor option running synchronously at 20, 10 or 6.7 MHz (16 and 8 MHz on the 386/16)
- 1 MB DRAM expandable to 8 MB on system board (120 ns DRAMs, 256KB or 1 MB)
- Alpha numeric real time diagnostic display (8-digit)
- One 32-bit memory expansion slot
- Specific Everex very high performance (1:1 interleave hard disk/floppy combination controller)
- Enhanced 101-key keyboard

(Landmark Benchmark = 35 MHz)

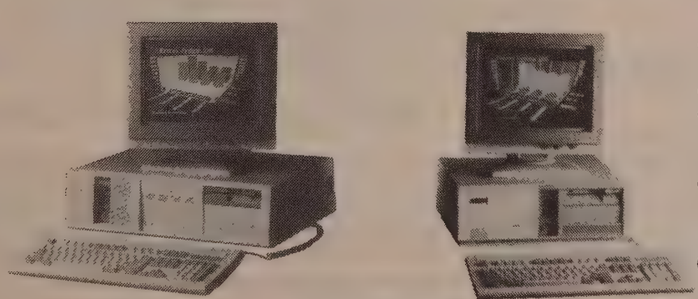
MIPS = 4.9

Norton = 24.3

International Micronet Systems
916 Clement Street
(between 10th & 11th)
San Francisco, CA 94118

(415) 752-8843

EVEREX
COMPUTER SYSTEMS DIVISION



INTERNATIONAL MICRO NET

Everex System 286/16

- Fully compatible with IBM PC/AT
- 80286 running at 16,8,05 5 MHz with 0 wait states on the 266/12
- Bus operates at 8 MHz
- 1 MB DRAM expandable to 4 MB on system board
- Front panel LED's for power-on, disk access and speed indication
- Alpha-numeric real-time status/diagnostic display (8-digit)
- 1.2 MB disk drive
- Special Everex high performance 1:1 interleave hard disk/floppy disk combination controller
- Speaker enable/disable switch

Full Line of Everex Computers & Peripherals Available CALL NOW!

Available only from Authorized Everex Computer Systems Division Dealers • All Everex Systems designed & manufactured in the USA

1 Year on-site warranty for all Everex Systems

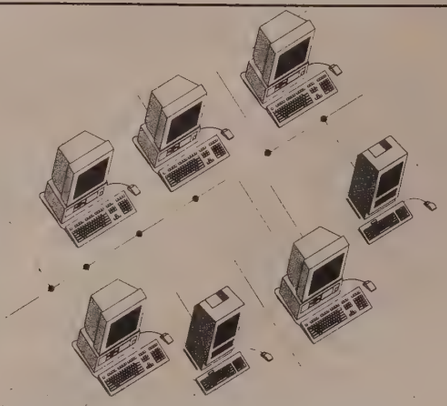
Everex is a registered trademark of Everex Systems Inc. IBM PC/AT is a registered trademark of IBM Corporation. Intel is a registered trademark of Intel Corporation.

INTERNATIONAL MICRO NET

We The Network

Advanced Netware 286 $1795

Entry Level Netware 286
$495



SFT/286 Version 2.1
$3,595

We have PC MAGAZINE Editors' Choice SMC Arcnet & Western Digital EtherCard Plus

Low Cost Alternative
Invisible Network
$299
(Includes Cable & Software)

Novell's Ethernet PC Terminal
$799
(Includes Ethernet Card)

Wide Area Networks

featuring

BANYON SYSTEMS

- Server to Server
- X.25
- Remote Host Access-Lease Line Connections
- Dial Out Connections
- Remote User Access Dial In

Vines 386

- Full Utilization of Intel 80386 32-Bit Architecture
- Data and Resource Sharing for Workgroups, Departments, and Corporations
- Seamless Communications Over a Broad Range of Networks and Protocols
- Complete Set of Integrated Options VINES Release 3.0 Features, Functions and Options
- Full Compatibility with Banyon's VINES/286, DTS, BNS and New CNS Servers
- Support for a Wide Range of Popular LANs

Also Available Vines 286

We Specialize In:

Services

- Custom Programming - PC's, Mini's, & Mainframes
- Database Design
- Multi-user Systems
- Inventory/Accounts Receivable Systems
- Gateways to Mainframes

Vertical Application Packages

- Inn Keeper System
- Job Costing
- Key Retailer
- Landlord & Landmaster
- Medical Management Plus
- Property Management
- Retail POS System
- Restaurant
- Video Rental System

International Micronet Systems

916 Clement Street (between 10th & 11th)
San Francisco, CA 94118

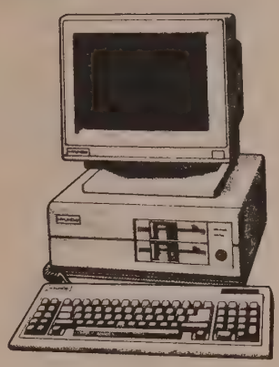
(415) 752-8843

Are Specialists

INTERNATIONAL MICRO NET

Hyundai Super 286c

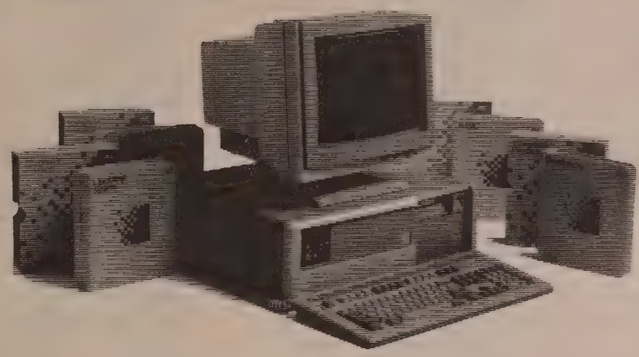
- 80286 Microprocessor
- Switchable to 8/10 MHz
- 1 Wait State
- 1.2 MB 5¼" Floppy Disk Drive
- 640K KB RAM
- 6 Expansion Slots
- 40MB HD
- ATI EGA Wonder Adapter
- Hi-Res Monochrome Monitor
- 2 Serial/Parallel
- 101-Key Keyboard
- 18 Month Warranty



$1,745

HYUNDAI

AST PREMIUM 286



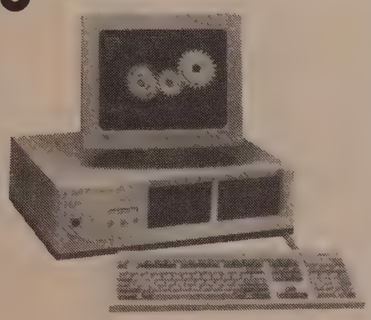
AST Model 70/80

- 1 MB RAM
- 1.2 MB Internal 5¼"
- 70 MB Micropolis Hard Disk
- Monographics Adapter
- 14" Hi-Res Flat Screen Monitor

$2,849

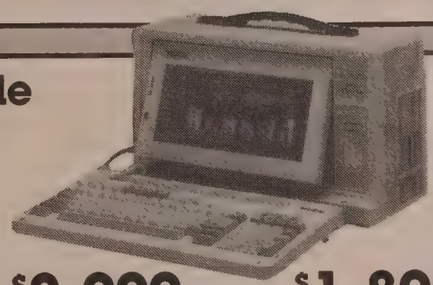
WYSEpc 386

Model 3216



32-bit 80386
1 MB RAM
1.2 MB Internal 5¼"
Serial/Parallel Adapter
80387 or 80287 CPU
Enhanced Keyboard

LCD Portable Computers



Compaq Portable III
Look-A-Like
1.2 MB Floppy
(1) 20 MB Hard Disk
LCD Backlit Screen

LCD 386 $2,999 LCD 286 $1,895

COMPLETE 386 SYSTEM
1 MB, 20 MHz, Hi-Res Monitor, 1.2 MB Floppy, 200W PS, WD Controller, Keyboard, VGA/EGA/MGA/CGA Adapter

Only $2,295

COMPLETE 80286 TURBO SYSTEM
256K, 10MHz, 0 Wait State, Case, 200W PS, Hi-Res Monitor, 1.2 Floppy Drive, WD Controller, Hercules Compatible Card, Keyboard

Only $999

COMPLETE 8088 TURBO SYSTEM
256K, 4.77/10 MHz Clock Speed, Hi-Res Monitor, 150W PS, Hercules Compatible Card, Multi I/O, Clock/Game/Serial, Keyboard

Only $555

Leasing Financing Available

VISA master charge

International Micronet Systems

916 Clement Street (between 10th & 11th)
San Francisco, CA 94118

(415) 752-8843

Wyse is a registered trademark of Wyse Corporation. Compaq Portable III is a registered trademark of Compaq Computers. AST Research is a registered trademark of AST Research Inc. Everex is a registered trademark of Everex Computer Systems Division
Prices subject to change.

PC, XT & AT ARE REGISTERED TRADEMARKS OF INTERNATIONAL BUSINESS MACHINES, INC.

Kenfil Announces Top Software Sellers

BUSINESS & PRODUCTIVITY —MS-DOS

Last Month	July	
1	1	WordPerfect
4	2	Carbon Copy Plus
3	3	RightWriter
11	4	Lucid 3-D
2	5	SideKick Plus
5	6	FormTool 2.0
7	7	Dac-Easy Accounting
–	8	Peachtree Accounting
8	9	Turbo C
10	10	NewsMaster II
–	11	Flow Charting II
–	12	Gem Draw Plus
–	13	Turbo Pascal
–	14	dBFast
15	15	MathCAD

UTILITIES—MS-DOS

Last Month	July	
1	1	Norton Utilities Advanced
2	2	Direct Access
3	3	PC Tools
4	4	XTree Professional
6	5	Fastback Plus
7	6	LapLink Plus
9	7	DESQview
–	8	Intelligent Backup
–	9	SeeMORE
8	10	Sideways
11	11	Disk Technician +
13	12	Q Dos II
14	13	Print Q
15	14	pcANYWHERE
–	15	COREIast

MACINTOSH

Last Month	July	
8	1	Superpaint
4	2	Suitcase
3	3	Beyond Dark Castle
1	4	QuicKeys
5	5	Mac Money 3.0
6	6	Hyper DA
–	7	"Draw It Again, Sam..."
–	8	Tempo II
–	9	Wet Paint Classic Clip-Art
–	10	Stepping Out It
–	11	Canvas
10	12	Word Finder
2	13	WordPerfect
7	14	Managing Your Money
–	15	Super 3D

Source: Kenfil Distribution, Van Nuys, CA. "Kenfil July Bestsellers."

Your #1 Source For Discounts!

Mon.-Fri. 8:30-6:00 Sat. 9:30-5:00

Lotus 123 $297 | dBase III + $369 | WORDPERFECT VER. 5.0 $229 | PagePerfect $229

SOFTWARE

• adaptive (usa), inc.
TRACKER .53
• adobe systems
ADOBE ILLUSTRATOR-MAC .292
ALL—ADOBE FONT LIBRARIES .CALL
• aldus corp.
PAGEMAKER/MAC .300
PAGEMAKER / IBM .459
• american small business
DESIGN CADD .147
DESIGN CADD 3/D .147
• ansa software
PARADOX V.2.0 .404
PARADOX 2.0 6 USERS .579
PARADOX 386 .595
• applied business tech
WORKBENCH STANDARD PC .509
WORKBENCH ADVANCED .749
• ashton-tate
dBASE III + .369
dBASE III + LAN PACK .579
dBASE MAC .292
FRAMEWORK II .369
BYLINE .179
RAPIDFILE .237
DRAW APPLAUSE .269
MASTER PRESENTATION GRAPHICS .329
MULTIMATE ADVANTAGE II .259
• autodesk
AUTOSKETCH REG .52
AUTOSKETCH ENH. W/8087 SUPPORT .62
• august group
PC-ANYWHERE III .79
• banner blue
ORG PLUS .62
• barrons educational
BARRONS SAT .36
• bitstream
INSTALLATION KITS:
#1. MS WINDOWS KIT .67
#2. VENTURA PUBLISHER KIT .67
ALL FONTWARE TYPEFACES .139
PROFESSIONAL TYPEFACES .277
• block development
FORM TOOLS .57
• boeing computer services
BOEING GRAPH .189
• borland int'l.software
QUATTRO .112
SPRINT .117
REFLEX .87
REFLEX WORKSHOP .45
REFLEX (MAC) .167
SIDEKICK NCP .40
SIDEKICK PLUS .112
SUPERKEY .65
TURBO PASCAL .65
TURBO PASCAL TUTOR .45
TURBO PASCAL GRAPHICS TOOLBOX .59
TURBO PASCAL EDITOR TOOLBOX .59
TURBO PASCAL DATABASE TOOLBOX .59
TURBO GAMEWORKS .59
TURBO LIGHTNING .59
TURBO NUMERICAL TOOLBOX .59
TURBO PROLOG .59
TURBO PROLOG TOOLBOX .59
TURBO BASIC .59
TURBO BASIC TELCOM .65
TURBO BASIC EDITOR TOOLBOX .65
TURBO BASIC DATABASE TOOLBOX .65
EUREKA EQUATION SOLVER .97
EUREKA EQUATION SOLVER/MAC .119
TURBO "C" COMPILER .62
WORD WIZARD .44
• business tools
TAS + ACCOUNTING .59
TAS + DATABASE .59
DEVELOPER'S DATABASE .139
• bpi
BPI GENERAL ACCOUNTING .167
• breakthrough s/w
TIMELINE V. 3.0 .299
TIMELINE GRAPHICS .107
• broderbund software
MEMORY MATE .42
TYPE ! .31
PRINTSHOP .37
PRINTSHOP COMPANION .32
PRINTSHOP GRAPHICS (1/2/3) EACH .27
TOYSHOP .39
TOYSHOP REFILL .19
• bourbaki
1 DIR + .55
• bridgeway publishing
FAST TRAX .33
MENU BLOCKS .49
• bytel
GENIFER .187
• core international
CORE FAST .97
• central point software
COPY TO PC (IBM & MAC) .21
PC TOOLS DELUXE .44
COPY TO PC OPTION BOARD DELUXE .107
• compuserve
COMPUSERVE STARTER KIT .22
GROLIERS ON-LINE ENCYCLOPEDIA .29
VIDTEX IBM PRO CONNECTION .33
• computer associates
SUPERCALC 4 .195
SUPER PROJECT PLUS .195
SPREADSHEET AUDITOR .79
SUPER PROJECT EXPERT .397
SILVERADO .91
SNAP-IN TOOLS FOR LOTUS .85
G/L & A/P & A/R & PAYROLL .CALL
• concentric systems
R&R/RELATIONAL REPORT WRITER .77
• csi/consumer software
DUET .57
• compuview products
V-EDIT PLUS .97
• cosmos software
ADVANCE REVELATION .485
• dac software
DAC EASY ACCOUNTING BONUS PACK .95
DAC EASY ACCOUNTING .59
DAC EASY PAYROLL .45
DAC BASE .32
DAC RE-PORT .29
DAC MATE .29
DAC EASY WORD II .32
DAC LIGHT .45
• delta tech.
DIRECT ACCESS .51
EXTRA .57
• design software
DS BACKUP PLUS .49
DS RECOVER .27
DS OPTIMIZER .36
DS TUTOR .21
• digital research
CONCURRENT PC DOS XM .171
CONCURRENT DOS 386 (3 USERS) .292
GEM COLLECTION .79
GEM DRAW PLUS V.2 W/BUS. LIB. .169
GEM GRAPH .167
GEM WORD CHART .109
GEM DESKTOP PUBLISHER .179
GEM DESKTOP .37
GEM PRESENTATION TEAM .257
• db fast
DB-FAST .57
• dow jones co.
DOW JONES NEWS RETRIEVAL .21
• executive systems
X TREE PRO .65
HOT .86
• electronic arts
CHUCK YEAGER FLIGHT TRAINER .27
CHESS MASTER 2000 .29
• fox company
FOX BASE PLUS V.2 SINGLE USER .195
FOX BASE PLUS V.2 MULTIUSER .297
SINGLE USER LIMITED RUNTIME .159
SINGLE USER UNLIMITED RUNTIME .257
MULTIUSER LIMITED RUNTIME .248
MULTIUSER UNLIMITED RUNTIME .339
• fifth generation
FASTBACK PLUS .95
• funk software
SIDEWAYS .42
IN-WORD (FOR LOTUS) .59
NOTE WORTHY .44
WORKSHEET UTILITIES .55
• fox & geller
QUICK CODE + .139
• fischer int'l
WATCHDOG .185
• foresight resources
DRAFIX PLUS
• gazelle system
Q DOS II VER.3
• generic software
GENERIC CADD 3/D W/RENDERING
GENERIC CADD LEVEL 3
GENERIC CADD V.3.0
GENERIC CADD ESTIMATOR
AUTO CONVERT
DOT PLOT
AUTO DIMENSIONING
DRAFTING ENHANCEMENTS #1 & #2
ELECTRONIC SYMBOLS #1
ELECTRONIC SYMBOLS (2/3/4/5) EACH
IGES MINI OR MAINFRAME LINK
FLOWCHARTS MODULE
HYDROLICS MODULE
BASIC HOME DESIGN
COMMERCIAL & RESENDICIAL
ALL OTHER SYMBOLS .CA
• golden bow systems
V OPT
V CACHE
V FEATURE DELUXE
• imsi int'l.
DR. HALO III
DR. HALO III W/MOUSE SYS. MOUSE
DR. HALO III Z-NIX MOUSE
DPG/DESKTOP PUBLISHERS GRAPHICS
PAGE PERFECT
• intersecting concepts
BACKUP MASTER
DISPLAY MASTER
• intuit
QUICKEN
• javelin corporation
JAVELIN PLUS
• lifetree software
VOLKSWRITER 3
TOTAL WORD
• living videotext
THINK TANK
MORE (MAC)
READY
• lightgate
FELIX
• lotus development
LOTUS 123
SYMPHONY
HAL
MANUSCRIPT
FREELANCE PLUS
LOTUS METRO
• logitech
LOGIMOUSE W/ + PACK S/W
LOGIMOUSE W/ + PACK S/W & CARD "BUS"
LOGIMOUSE PS/2 MOUSE
PC PAINTBRUSH OPTION PACK
GENERIC CADD OPTION PACK
LOGITECH HI-RES MOUSE
• macropac
101 MACROS FOR M/S EXCEL/MS DOS.
101 MACROS FOR LOTUS 123
101 MACROS FOR SUPERCALC
101 MACROS FOR SYMPHONY
101 MACROS FOR dBASE III +
101 MACROS FOR WORDPERFECT
101 TIPS, TRICKS, TRAPS 4 LOTUS
• mansfield software group
K EDIT
• mark williams co.
FAST FORWARD
• master soft
WORD FOR WORD
• mathsoft
MATHCADD VER.2
• meca
MANAGING YOUR MONEY
• meridian
CARBON COPY PLUS
• micropro int'l.
WORDSTAR PROPACK VER.4
WORDSTAR 2000 + PERSONAL EDITION
WORDSTAR 2000 + LEGAL VERSION
• micrografx
PC DRAW
WINDOWS DRAW W/CLIPART

DISCOUNT MICRO WORLD™

68 PAUL DRIVE SUITE C SAN RAFAEL CALIFORNIA 94903 ▪ 415 492 8890

CALL NOW • TOLL FRE
1-800-225-3034 CA.

Terms: Prices include 3% cas discount. Add 3% for charg card orders. Shipping on mo software is $5.00. CA. order ac 6% sales tax. Price and availab ity are subject to change witho notice.

Your #1 Source For Discounts!

Call Now - Toll Free 1-800-225-3034 CA.

M/S Excel $295 | **Clipper $353** | **Super Calc 4 $195** | **NEC Multi-sync $579** | **MS Windows V. 2.03 $57** | **Ventura PUBLISHER $469**

IN-A-VISION 259
WINDOWS GRAPH 229
WINDOWS CONVERT 67
WINDOWS CAD 59
WINDOWS CAD CLIPART 59
THE DESIGNER 425
• micrologic corp.
TORNADO NOTES 55
TORNADO NOTES W/LIBRARY 75
• microrim
R BASE FOR DOS 429
DB GRAPHICS 177
• microlytics
GOFER 37
• microsoft
WRITE/MAC 100
PAGEVIEW 35
BOOKSHELF 215
WORD /MSDOS 210
WORD /MAC 221
EXCEL /MSDOS 295
EXCEL /MAC 221
MACRO ASSEMBLER 88
WINDOWS V. 2.03 57
WINDOWS 386 117
WINDOWS DEVELOPMENT TOOLKIT 309
"C" COMPILER V. 5.1 259
QUICK "C" 62
MULTIPLAN 121
QUICKBASIC COMPILER 65
BUS MOUSE W/EASY CADD 112
BUS MOUSE W/PAINTBRUSH 105
BUS MOUSE W/WINDOWS 135
SERIAL MOUSE W/EASY CADD 117
SERIAL MOUSE W/PAINTBRUSH 105
SERIAL MOUSE W/WINDOWS 135
WORKS /MSDOS 119
WORKS /MAC 177
FLIGHT SIMULATOR /MSDOS & MAC 33
ACCESS (COMMUNICATIONS) 139
CHART 242
PROJECT 277
LEARNING DOS 33
FORTRAN COMPILER 269
COBOL COMPILER 412
• microstuf c/o d.c.a.
CROSSTALK 16 95
CROSSTALK MARK 4 119
REMOTE 95
• migent
ABILITY VER. 2 109
MIGENT POCKET MODEM 129
• monogram/tronix
DOLLARS & SENSE W/FORECAST 99
• nantucket
CLIPPER 353
MC MAX /MAC 139
• new england software
GRAPH IN THE BOX 55
• northedge software
TIMESLIPS ADV. V.3 109
• nolo press
WILL WRITER 37
• owl international
GUIDE 107
• paperback software
VP PLANNER 44
VP PLANNER PLUS 89
VP INFO 63
VP EXPERT 63
VP GRAPH 63
• paul mace software
MACE + UTILITIES 52
H TEST H FORMAT 52
GRASP 52
• palantir software
WINDOWS FILER 99
WINDOWS SPELL 45
WINDOWS IN-TALK 99
WINDOWS CALC .....CALL
• peachtree software
COMPLETE BUSINESS ACCOUNTING 147
• patton & patton
FLOW CHARTING II + ...137
• p.c.s.g.
LIGHTNING 62
LUCID 3/D 89
• pinpoint
MICRO COOKBOOK 29
• personics
@ BASE 99

SMART NOTES 47
SEE MORE (FOR L. 123) 47
• peter norton
NORTON UTILITIES VER. 4.0 49
ADVANCED NORTON UTILITIES 77
NORTON COMMANDER 39
INSIDE THE IBM PC (BOOK ⅓ DISK) 24
NORTON GUIDES / PASCAL 44
NORTON GUIDES / ASSEMBLY 52
NORTON GUIDES / "C" 52
NORTON GUIDES / BASIC 52
TWINPACK / ASSEMBLY & PASCAL 65
TWINPACK / ASSEMBLY & "C" 72
• prosoft
FONTASY 39
ADD ON FONTS 1/2/3 EACH 30
• power up!
CALENDAR CREATOR + ...37
LABELS UNLIMITED 45
QUICK CALENDAR PLUS 57
• prime solutions
DISK TECHNICIAN REG 65
DISK TECHNICIAN W/RLL SUPPORT 72
• quarterdeck
DESQVIEW VER. 2.0 71
DESQVIEW COMPANION #1 62
QEMM/386 EXP. MEMORY MANAGER 38
• qualitas
386 TO THE MAX 59
• revolution software
CRUISE CONTROL 27
• reference software
GRAMMITIC II 49
• rightsoft
RIGHTWRITER 62
• solution systems
BRIEF EDITOR 171
• simon & schuster
TYPING TUTOR 4 30
WEBSTERS SPELLING CHECKER 39
WEBSTERS THESAURUS 39
SPEED READING TUTOR 27
• stella
STELLA BUSINESS GRAPHICS 55
• software group
ENABLE 366
• softclone
MIRROR MIRROR II 44
• surpass
SURPASS 292
• softlogic
DISK OPTIMIZER VER. 3 39
DOUBLE DOS VER. 3 39
SOFTWARE CAROUSEL VER. 3 45
CUBIT VER. 3 40
MAGIC MIRROR 49
@ LIBERTY 59
• softstyle
PRINTWORKS (LASERS) 67
PRINTWORKS (DOTMATRIX) 42
• storage dimensions
SPEEDSTOR 55
• software directions
PRINT Q 65
• software publishing
PFS:PROFESSIONAL FILE 132
PFS:PROFESSIONAL WRITE 108
PFS:PROFESSIONAL PLAN 65
PFS:FIRST CHOICE 109
PFS:FIRST PUBLISHER 59
PFS:FIRST PUB. ART GALLERY PACK 73
PFS:FIRST PUB. ALL FONT KITS 27
HARVARD TOTAL PROJECT MANAGER .323
HARVARD GRAPHICS 267
• springboard
THE NEWSROOM PRO 79
CERTIFICATE MAKER 34
• symantic
Q&A 195
Q&A WRITE 97
IN BOX/PC E-MAIL 58
• swfte int'l.
GLYPHICS 89
• sublogic
KINGS QUEST I/II/III 32
JET 36
SCENERY DISKS (ALL) 21
• traveling software
LAP LINK 75
LAPLINK+ 85
DESKLINK 95
• turner hall

4 WORD (FOR LOTUS) 64
4 WORD VIEWS .....CALL
SQZ PLUS! 57
NOTE-IT! 53
SPELLIN 50
SPREADSHEET ANALYST 57
• three/d/graphics
PERSPECTIVE 131
• unison world
PRINTMASTER PLUS 35
NEWSMASTER 59
• vericomp
SOFT BYTES 29
• vm personal sw
RELAY SILVER 79
• white crane
BROOKLYN BRIDGE 79
• wordtech systems
DB XL DIAMOND 107
QUICKSILVER DIAMOND 312
• word perfect corp.
WORD PERFECT VER. 5.0 229
WORD PERFECT LIBRARY REL. 2 55
WORD PERFECT EXECUTIVE 107
WORD PERFECT/MAC 185
DATA PERFECT 272
PLAN PERFECT 166
REPEAT PERFORMANCE 35
• water works
RAM LORD 55
• xerox corp.
VENTURA PUBLISHER REL. 2 469
• z soft
PC PAINTBRUSH PLUS 67
PUBLISHERS PAINTBRUSH 169
PUBLISHERS TYPE FOUNDRY 262

HARDWARE

• amdek
AMDEK 410 BLACK & WHITE 155
AMDEK 1280 BLACK & WHITE W/CARD .660
CD/ROM LASER DRIVE 605
• ast research
SIX PAC PLUS W/0K 107
SIX PAC PLUS W/64K 141
RAMPAGE AT W/512K 389
RAMPAGE XT W/256K 287
ADVANTAGE 286 W/128K 249
PREVIEW I/O CARD 129
• ati
ATI EGA WONDER CARD 181
ATI VGA VIP 262
• belkin
SWITCHBOX SERIAL/2 POSITION 42
SWITCHBOX PAR./2 POSITION 42
• chips "memory"
256K 80NS 12
256K 100NS 15
256K 120NS 13
256K 150NS 12
64K 150NS 4
SIMMS CHIP SETS .....CALL
• citizen printer co.
CITIZEN 180-D 180CPS 155
CITIZEN 180-D 180CPS 173
TRIBUNE 224 24PIN/132COL 559
CITIZEN PREMIERE 35 DAISYWHEEL .539
• complete pc
COMPLETE ANSWERING MACHINE 229
COMPLETE FAX 309
COMPLETE HAND SCANNER 167
• curtis
UNIVERSAL COMPUTER STAND 19
UNIVERSAL PRINTER STAND 19
COMPUTER TOOL KIT 21
• everex
300/1200BAUD INT. MODEM W/S/W 87
1200/2400BAUD INT. MODEM W/S/W 149
2400/1200/300BAUD EXT. MODEM 189
I/O MINI XT W/PAR/SER/CLK 61
I/O MINI AT W/PAR/SER 61
RAM 3000 DELUXE-AT OK TO 3MEGS 92
PS/2 2400 INT. MODEM 191
PS/2 2400 EXT. MODEM 227
EGA DELUXE W/PAR. PORT 129
EVERGRAPHICS MONOCARD W/PAR. PORT 77
COMBO I/O 2 FL. + PAR/SER 79
• genoa
SUPER EGA HIGH RES.800x600 195

• hayes
ALL MODEMS .....CALL
• hercules
GRAPHICS CARD + W/RAMFONT 179
• intel corporation
MATH COPROC.8087-PCXT-5MHZ 112
MATH COPROC.8087-PCXT-8MHZ 157
MATH COPROC.8087-PCXT-10MHZ 199
MATH COPROC.80287-AT-6MHZ 174
MATH COPROC.80287-AT-8MHZ 257
MATH COPROC.80287-AT-10MHZ 284
MATH COPROC.80387-386-16MHZ 464
• kraft
PREMIUM II JOYSTICK 27
PREMIUM III JOYSTICK 32
• microspeed
FAST 88 W/ V20CHIP 96
FAST TRAP (MOUSE/LIKE) 95
• megahertz
9 MHZ XT SPEEDUP CARD! IBM ONLY .119
• mountain
30 MEG. HARDDISK CARD INT 519
• nec
NEC MULTISYNC MONITOR 579
NEC MULTISYNC PLUS 905
NEC MULTISYNC XL 2099
NEC P5300 PAR PRN 699
ALL PRINTERS .....CALL
• panasonic
KXP1080i/M2 189
KXP1091i/M2 207
KXP1524 24PIN WIDE CARR 567
KXP1592 389
• paradise
EGA AUTOSWITCH-480 155
VGA PLUS 252
VGA PROFESSIONAL 359
• plus development corp.
20 MEG HARD CARD 557
40 MEG HARD CARD 759
• samsung
12" AMBER MONO. MONITOR 85
14" EGA MONITOR W/TILT SWIVEL 340
• seagate
20 MEG ST225 W/CABLES 227
20 MEG ST225 W/WDCC + CABLES 262
30 MEG ST238RLL W/CABLES 232
30 MEG ST238RLL W/WDCC + CABLES282
40 MEG ST251 W/CABLES 363
40 MEG ST251-1 W/CABLES 424
80 MEG ST4096 W/CABLES 585
• smt
SMT NO SLOT CLOCK 39
• stb
STB EGA PLUS 249
STB CHAUFFEUR (HT) 191
VGA EXTRA 299
• toshiba
TOSHIBA P321SL P/S 495
TOSHIBA P341SL P/S 639
TOSHIBA P351SX P/S 959
360K PC/286 DISK DRIVE 85
1.2 MEG. AT DISK DRIVE 109
720K 3.5 DISK DRIVE 95
1.44 3.5 DISK DRIVE 112
• video 7
VEGA DELUXE EGA 187
VEGA VGA 267
• zuckerboards
ALL CARDS .....CALL

MISCELLANEOUS

• amaray
DISKETTE HOLDER/50 DISKS 5¼ 12
DISKETTE HOLDER/100 DISKS 5¼ 17
DISKETTE HOLDER/30 DISKS 3.5 10
• maxell corp.
5¼ DS 10 PACK DISKS 11
5¼ HD-AT 10 PACK DISKS 21
3.5 DS 10 PACK DISKS 19
• generic disks
LOW PRICES! .....CALL
• sony
3.5 DS 10 PACK DISKS 20
3.5 HD/AT 10-PACK 45
• printer cables
IBM PARALLEL CABLE 6' 10
IBM PARALLEL CABLE 12' 17
• computer accessories
S-10 SURGE PROTECTOR 25

DISCOUNT MICRO WORLD™

68 PAUL DRIVE SUITE C SAN RAFAEL CALIFORNIA 94903 • 415 492 8890

Call For Programs Not Listed

Terms: Prices include 3% cash discount. Add 3% for charge card orders. Shipping on most software is $5.00. CA. order add 6% sales tax. Price and availability are subject to change without notice.

Tap Dancing On The First Amendment

In Thomas Wolfe's essay "What If He's Right?" there's a story about Marshall McLuhan telling General Electric (GE) executives that they weren't in the light bulb business, they were in the information business. The light from their bulbs, once it struck an object and then reflected into a human eye, was a conveyor of information.

Something was lost in the translation. Someone seems to have mistaken "conveyor" for "controller." In the "real world" of GE, whistle blowers (information providers) are chastised (see The Wall Street Journal, front page, June 23, 1988) and its employees are summarily denied their rights to free speech under the First Amendment.

One of the best all-around commercial information utilities is the GE Information Services (formally called GEISCO) owned system called GEnie. It's a wonderful system for expressing your own point of view. Unless you happen to be an employee of GE.

By company edict, GE employees must keep all criticisms of GE to themselves, or restrict their views to discussions over nachos and beer. If GE employees put any comments critical of GE policies or products into a GEnie online public forum, they are liable to find themselves out of job and their account on GEnie withdrawn.

Mistaken Identity

Shabtai Klein works as contract programmer. The agency he works for contracts his services for a temporary amount of time to any company that needs him. During the month of June, Klein worked for GE Information Services in their training and documentation department.

It was during his temporary assignment with GE Information Services that he uploaded a message critically stinging GE's involvement in defense related contracts to a public conference on GEnie called "Boycott GE." However, he used his own personal GEnie account and the message was uploaded on his own time.

The crux of the message was that he was voluntarily discontinuing his use of GEnie until the parent company, GE, stopped its involvement as a Department of Defense contractor. His protest stemmed from the recommendations of a peace activist group known as INFACT.

Klein's message read, in part: "After using GEnie for just a few months, I have decided to discontinue my use of GEnie. This is not a decision I made lightly. I am a microcomputer specialist in the graphics and desktop publishing field. In fact, my current assignment has me working at GE Information Services, Training and Documentation department (daytime phone [deleted]).

"GE may claim to "Bring Good Things to Life," but a close look shows GE is much more concerned with death. According to an article about the boycott in the St. Louis Post-Dispatch, GE was the Pentagon's No. 2 contractor in 1986, with $6.8 billion in contracts."

Within 24 hours of Klein's posting his message, the system administrator deleted it, and renumbered the conference to make it appear as if his comment never even existed. His GE boss informed him that his services were no longer required. And when he went home that night, he found that GEnie had pulled his account. He was locked off the system.

All this went down on a Friday. Klein wasn't able to get answers until Monday morning.

On Monday, in a conversation with Bill Louden, GEnie's vice president, he was told that "It was GE's policy that GE employees not identify themselves when they use the system." But Klein wasn't a "real" employee of GE. "Precisely," says Louden. "But he strongly implied that he was. And further, he published a company phone number. These facts, combined, represented an inappropriate message, so we deleted it from the system." Louden denies that Klein was being censored for his comments.

Louden claims that after his discussions with Klein, on Monday morning, it was agreed that his account would be reinstated, if Klein would post a message "stating that he was not an employee of GE."

Free Speech: Never The Issue?

Klein agreed to repost his message with the clear disclaimer that he was not an employee of GE. With that cleared up, Louden had no problem with Klein's message, and, in fact, he seems delighted that the "Boycott GE" conference is online.

"Any kind of a controversy draws more use," he told me. "And that only drives up my revenue. We've never told any GEnie user that they can't speak their mind.

"I don't know if Klein is trying to be some kind of martyr, but the issue, for me, was never one of free speech."

But what if another GEnie user, one identified as a "real" employee of GE, picked up Klein's impassioned appeal and voiced similar concerns? How would they be treated? "Well I, er . . . that's rather speculative and not what happened here," Louden said, as if he had to deviate from a scripted set of comments.

Yet that is exactly the issue that played out over the weekend.

Louden was concerned because, in his words, "the average user couldn't determine whether Klein was a GE employee or not." And since there is a "gag order" on GE employees, the very perception of a GE employee criticizing the company had to be dealt with in a rather abrupt manner.

"These kinds of issues are between an employer and employee and are not between a service like GEnie and user," says Louden. "I think there's a different arena you enter into at that point at that time."

When I asked Louden, point blank, whether a GE employee is allowed to openly criticize GE using a personal account on GEnie, he tap-danced around the issue, saying, "The only equivalent policy at GE that may be related, and I'm sure every company has this, is the use of company stationery for personal viewpoints. In that environment, a personal viewpoint on company stationery could be construed as a company policy or position. So there is a policy, like most corporations, restricting that type of luxury."

Do we want corporations with the clout of GE running information systems? Remember that GE owns NBC, too. Sam Simon, a Washington, DC-based telecommunications lawyer and lobbyist, asks: "Would Tom Brokaw be fired for criticizing a GE product?"

Luxury indeed. But can GEnie be construed as "company stationery"? Louden answers that question, too. "I'm not sure that the posting in a GEnie world, when [someone is] identified as a GE employee, and publishes a GE phone number—I'm not sure that's any different than using company stationery."

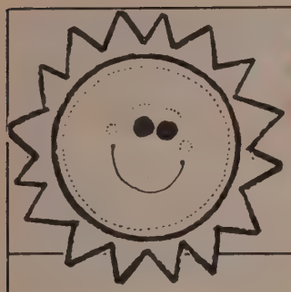
Case closed. You can say anything you want, but if you're a GE employee that better not be anything critical of your employer.

Catch The Drift

The implications here go beyond a corporation's "right" to censorship. When a company like GE, which employs hundreds of thousands of people directly or indirectly, throttles the free flow of information by company edict, some serious questions must be asked.

Do we want corporations with the clout of GE running information systems? Extending the question beyond online communications, remember that GE owns NBC, too. Sam Simon, an influential

Copyright © 1988 by Brock N. Meeks. All rights reserved. *Brock Meeks is a San Diego-based columnist and former Bechtel nuclear plant project administrator . . . until he found a whistle and used it.*



Summer Specials

ACER 910

- 6/10 MHz Speed
- 512K RAM, 1.2 MB Fl. Dr.
- 20 MB Hard Drive
- Monochrome System

$1665

Call Us For All Models From

COMPAQ · WYSE · IBM · AST RESEARCH INC. · LEADING EDGE · ACER

Laptops

NEC · TOSHIBA · ZENITH

NEC EL II $1459

Printers

Panasonic 1080i **$175**

HEWLETT PACKARD · TOSHIBA · brother · NEC · OKIDATA · ALPS · ACER · CITIZEN

Scanners

HEWLETT PACKARD

Modems

Hayes® · US Robotics™ · PRACTICAL PERIPHERALS · MICENT™ · EVEREX COMPUTER SYSTEMS DIVISION

INTEL

Inboard 386 XT/AT $845/$1029

8087 **$99** / 8087-2 **$185**

80287-1 **$295** / 80387-16 **$492**

Software

Carbon Copy Plus	$110	Managing Your Money	$120
Q & A	$205	Sidekick Plus	$121
Microsoft Excel	$299	Microsoft Windows	$69
Microsoft Quick C	$79	Microsoft Windows 386	$159
Microsoft Word	$209	Microsoft Works	$149
Ventura Publisher	$497	Wordstar Rel. 4	$249
Lotus 1-2-3	$309	WordPerfect 5.0	$229

NOVELL

All Miscellaneous Supplies and Accessories Available at Discount Rates.
Novell Networks Configured and Installed. Free Estimates. Service Contracts Repairs.

5835 Doyle Street
Suite 101
Emeryville, Ca 94608
(415) 658-1433
HOURS: M-F 9:00 A.M.-6:00 P.M.
SAT. 10:00 A.M.-5:00 P.M.
FAX (415) 658-7339

MICRO TECH International

605 Market Street
Suite 510
San Francisco, CA 94105
(Corner of 2nd and Market, 1st Nationwide Building)
(415) 546-4188
HOURS: M-F 9:30 A.M.-5:30 P.M.
FAX (415) 546-5187

Call in for our free catalog!

*Free delivery/pickup and estimates on all hardware repairs.

Prices subject to change and are good while supplies last. Prices are cash only. Add 5% for terms.

An Industry First

110MB

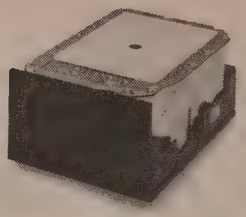
Hard Drive Package

$995.

SpeedStor Software

by Storage Dimensions

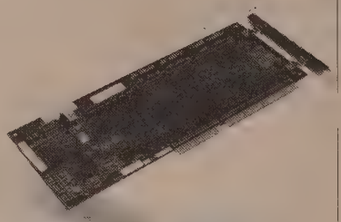
- Proven excellence in partitioning software with over 400,000 installations
- No need for expensive and difficult BIOS changes
- Fully compatible with PC/MS-DOS 2.1-3.3



Maxtor XT-1120R

5¼" RLL Hard Drive

- 110 Megabytes (formatted)
- 27ms access time
- Reliable Maxtor quality
- Includes mounting hardware
- Burned-in, tested and formatted



Western Digital

WD1003-RLL Controller

- Industry standard, fast and easy integration
- 100% IBM PC AT compatible
- Controls one or two 5 1/4" Winchester drives
- On-board diagnostics

Best High-Capacity Value Ever!

Here is **the best value ever offered in a high-capacity drive package**. It includes the 110MB drive, controller card, software, mounting hardware and cable at a cost of just over **$9.00 a megabyte**. You won't find a better deal anywhere for IBM AT, 80286 and 80386-based computers running power DOS applications.

To acquaint you with Anthem Technology Systems, we've joined three of the best manufacturers in the industry to give you a truly unique offer. You're getting a system built from the finest products available. When you need a high-capacity storage supplier, and you want value and service, we want you to think of us.

This offer only applies to the 500 packages we currently have in stock. We cannot guarantee this value after this supply is gone, so call quickly to take advantage of this package.

ATS

ANTHEM TECHNOLOGY SYSTEMS

A Division of Anthem Electronics Inc. / A New York Stock Exchange Company

2157 O'Toole Avenue, San Jose, California 95131

1-800-451-5441

In California call 408-943-6631

Missing Your Copy of MicroTimes?

If you're having trouble finding MicroTimes at your favorite store, why not have it delivered right to your company.

If you're a company that can distribute 50 or more copies per month, just call our distribution department at 415-652-3810, and ask to have MicroTimes delivered to your doorstep. It's SO EASY!

Washington, DC-based telecommunications lawyer and lobbyist, asks: "One has to wonder whether such a policy affects how objective NBC news broadcasts are. Would Tom Brokaw be fired for criticizing a GE product?"

The issue of "the conduit controlling content" looms too real in these situations. Former FCC Chairman Nick Johnson says: "Corporate censorship is rampant, it's horrible, it effectively undercuts the purpose and role of the First Amendment. If corporations can silence employees on those subjects they know best, and, increasingly, corporations provide the employment, and especially for professionals and technocrats, millions of Americans have been very effectively denied the First Amendment's protection, and with a devastating impact on the rest of us who need the information they can provide."

CompuServe users mentioning CompuServe competitors have found nasty little "warning notes" stuffed in their electronic mailbox, telling them not to "try and recruit" for other online services, "or else" their access to CompuServe will be denied.

Future Shock

There are those that will support the right of a company to hold rogue employees in check. One businessman told me, "If you owned a company, would you want your employees to hold a demonstration outside your business establishment, telling people how terrible they thought your product was?" My answer: no. But could I forbid them to do so? The legal answer: no. The real world answer, unfortunately, appears to be yes.

It concerns me that powerful online systems such as GEnie and CompuServe tightly rein in specific types of information. On GEnie, it's an employee's critical comments about the company. On CompuServe it is information about competitive services. Users mentioning CompuServe competitors have found nasty little "warning notes" stuffed in their electronic mailbox, telling them not to "try and recruit" for other online services, "or else" their access to CompuServe will be denied.

As narrow as these two examples are, they are frightening in scope. These services could, if they wished, expand their censoring powers with impunity. As the state of the online world stands now, there are no First Amendment guarantees in the online community.

Such issues are the foundation on which we will have to build our ideas about separating content and conduit, and providing legally guaranteed rights of entry and access.

Just how far are we willing to let the information age evolve before the real questions are asked, before the real problems are addressed? Let's hope we don't carry such questions into the next century; the weight may be more than we can bear. □

PD SOFTWAREHOUSE

3080 Olcott Drive Suite 125A Santa Clara, CA 95054

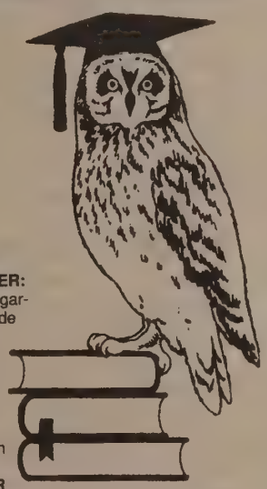
408 748-0461

UTILITIES

Virus Got You Down?

UT #20—Security: Bombsquad, Chk4Bomb, Password protections, encryption, plus more. 10 Utilities plus Trojan Horse listings.

UT#1—MAGEE AUTOMENU v4.0: GREAT! COLORFUL! Easy to set up hard disk menuing system.
UT#31—POINT & SHOOT: Program execution and file management, with 30 menu entries and 10 sub-menus per menu, calculator, disk stats, & help.
UT#21—LASER UTILITIES: Graphics/text printing, printer utilities, fonts, program controls, set-up, convert PC-Paint files.
UT#27—LASER SOFTFONTS (2 DISK SETS)**:** Old English, Script, Helvetica, Bold, Italic, Dingbats, Computer keyboard symbols, PI, Tiny, Large, Hollow, more!
UT#26—DISKETTE LABELS: Labels for 3.5", 5.25", DiskCover.



EDUCATION

ED#3C—AMY'S FIRST PRIMER: 6 wonderful Kindergarten programs include arithmetic, spelling, color and shape recognition. CGA req'd.
ED#3D—KID'S BANKBOOK: Keep track of allowances and learn basic finance.
ED#3E—AMANDA'S LETTER LOTTO: Alphabet game for 18 months & up. CGA req'd.
ED#3F—PRESCHOOL ED: Add, Subtract, Divide, Multiply, Kid's giant letter Word Processor, Funnels & Buckets Math Arcade Game.
ED#3H—WHIZQUIZ: Problems on elementary math (including fractions, decimals, percents and reciprocals) 10 levels of questions. CGA req'd.
ED#4—GEOGRAPHY I: WorldMap, Geochron, States & Capital games. CGA req'd.
ED#23—FLAGS: Flags of the nations displayed on screen. 115 flags in all. CGA req'd.
CL#12—JEM LOGO: Teaches children the basics of computer programming.
ED#1—EQUATIONS & LOGIC: Math/Science formulas + truth tables.
ED#2—IQ: Programs with tests to improve your IQ similar to questions on SAT test (good practice).
ED#4B—GEOGRAPHY II: World-3D, World Weather Data. CGA.
ED#4C—THE WORLD DIGITALIZED (3 DISK SET)**:** Over 100,000 points of long/lat detailed maps. CGA.
ED#14A—TEEN ED #1: Higher, Math, Trig, Geometry, Biology, Circuitry, PI Morse Code.
ED#14B—TEEN ED #2: Algebra, chemistry, history, spelling bee, math, astronomy, plus San Mateo Education Set.
ED#14C—TEEN ED #3: VIDEO-CHEM Game teaches chemical valances.
ED#16—TIME TRAVEL HISTORY: American History Adventure Quiz Game, PLUS the U. S. Constitution.
ED#18—TYPING TUTORS: LetterFall & PC-Touch teach typing and speed. Will work on Mono.
ED#19—PC-FASTYPE: Typing tutor for beginners or to build speed. CGA req'd.
ED#20—ALGEBRA: Does computations in integers and reals.
ED#22—PRE CALCULUS TUTOR: Trig/Algebra vital to Calc 1 & Business Calc.
ED#24—PHYSICS: High school level physics.
ED#26—DNA & ELEMENTS: Graphic DNA analysis/Element chart.
FL#3—SPANISH (2 DISK SET)**:** beginning and ad-vanced Spanish vocabulary, phrases, etc.

NEW ITEMS

C#18—FORD '88: Take the wheel and drive any Ford vehicle over different tracks. CGA req'd.
ED#3J—BEGINNING SOUNDS 1.01: Pre-schoolers learn to relate to the beginning sounds of words, which is the first stage to learning to read. CGA req'd.
ED#28—SELECT-A-COLLEGE: 1700 college database helps you select the college that most closely meets your requirements.
ED#30—WISDOM OF THE AGES (4 DISK SET): Instant access to high content information from classical sources world-wide. You select the subjects of your choice. Quotations, thoughts, proverbs and epigrams organized to give the most benefit in the least time appear on your screen. 2 disk drives or Hard Disk req'd.
SI#60—FAST FOOD: FASTFOOD gives you a complete nutritional breakdown of major chain fast foods. Weight calculates your ideal body weight.
SI#63—WEIGHT CONTROL: Keep track of your diet, calculate calories, and see the effect caloric intake has on weight loss, data on dieting principles and ideas for diet food shopping list, a self test for potential dieters, plus records weekly weigh-ins, and more!
UT#36—LASER SOFTFONTS II (2 DISK SET): Include a large collection of Times Roman fonts in many sizes in LandScape and Portrait, plus 60 point Centrum font, 60 point Helvetica, plus 30 and 60 point Times Roman. Add these to your collection!

As Low As **$2.99** per disk for ten or more

$3.50 Individually

Purchasers of the following Adult programs must be over 21 years old and sign the order form.

ADULTS All require CGA.

AD#1A—ADULT GAMES 1: 5 games.
AD#1B—ADULT GAMES 2: 2 Arcade games.
AD#1C—ADULT GAMES 3: Adult & XRated
AD#2D—SLIDE SHOW: Sit back and enjoy.
AD#2E—XXX & PINUPS: Hot digitized pics.
AD#2F—ANIMATED PORNO: German made. 4 scenarios.
AD#2G—ADULT GRAPHICS: Exciting images.
AD#2H—XXX IN MOTION (2 DISK SET)**:** Animated Graphics at its best.

COMPUTER LEARNING

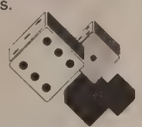
CL#2—DOS TUTOR & HELP: Menu driven tutor. Learn DOS commands, and computer history plus DOS HELP program with usage and options of all commands.
CL#3—BASIC TUTOR: Excellent interactive tutorial written in basic. Covers all aspects of basic programming.
CL#5—P.D. TUTOR: How to run Public Domain, ShareWare, User-Supported a must for new users.
CL#11—DOS DYNABOOK (2 DISK SET)**:** DOS Tutor and trouble shooting programs. AI at its BEST!

GRAPHICS

GR#14—"PRINTSHOP" GRAPHICS: three additional libraries of graphics. Must have Printshop™ to run over two hundred additional pictures!
GR#14B—"PRINTMASTER" GRAPHICS: 3 additional libraries of graphics Must have Printmaster™ to run.
GR#2—ICONVERT: Convert graphic icons from/to PrintMaster, PrintShop, NewsMaster, NewsRoom, Fontasy, Doodle, MacPaint, RLE, BASICA BLOAD, Windows Paint, and PC Paintbrush. CGA req'd.

BUSINESS

B#6—PC-ACCOUNTING PRO: Integrated GL/AR/AP/PR/INV. Single entry like Dome.
B#3—EZ-FORMS VC24: Business forms with Master Form Generator and save.
B#21—BUSINESS LETTERS (2 DISK SET)**:** 650 fill-in business letters to be edited. (Archived)
OR#16—ZIP-PHONE (2 DISK SET)**:** Area code/zip code utility.
B#15—PROJECT MANAGEMENT: Interactive programs using critical path method.
B#11—FLOWCHARTER: User-friendly flowcharting program. Has several dozen stock symbols.



GAMES

COLOR

C#1—ARCADE GAMES: Crossfire, Space Gugs, Pac-Girl, Life, Space Invaders, Asteriod, Pac-Man, Fortune, Frogger.
C#4—ARCADE GAMES: Starship, Sci-Fly, Sopwith Camel, Killer Bees, Tank, Ninja.
C#9—CASINO GAMES: Slots, Baccarat, Solitaire, Blackjack, Acey-Deucy, Poker Plus Blackjack Strategy Tutor.
C#13—DIGITAL BASEBALL LEAGUE: realistic simulation game based on actual lifetime statistics of major league players! Good color graphics! Entertaining simulation play.

MONO

MC#1—MONO ARCADE GAMES: Bugs!, Pitfall, Pac-Man, Starship, Haunted Mission.
MC#2—SPORTS & CASINO: Fortune, Craps, Blackjack, PC-Golf, Monopoly, Armchair QB.
MC#9—GAMES ASSORTMENT: Lotto 6/49, PV-Lotto, Duplicate Bridge Tournament, News, Snake, Crazy 8's, Dominoes, Football, Crossword Puzzle Generator, JigSaw Puzzle.
MC#30—TURBO-BRIDGE: Play 1 or all 4 hands as you learn strategy, or let your PC play all hands, and observe.

Please circle or refer to disk # when ordering.
This is only a partial list - Over 600 titles
Call for our latest catalogue.
Hours: M-F 9 am - 6 pm

Total # of Disks _____
Cost per disk _____
CA Res Sales Tax _____
Ship / Handling $2.00
Total Enclosed _____
Ship To _____
_____
_____
_____
Signature (over 21)
_____

REALIZABLE FANTASIES • BY JIM WARREN

New Life For Old Hardware

Here is more intellectual shareware—ideas for those visionaries and adventurers who convert the present into the future.

Recycling Revisited

Older peripherals and subsystems offer significant utility and entrepreneurial opportunity:

Older hard disks—almost free due to their advanced age—can still provide significant upgrades to current floppy-only systems. This particularly includes floor-mounted mainframe disks and diskpacks—often with many-hundred megabyte capacity and high speed.

Many owners of elderly micros have old 8-inch floppy disk drives, oodles of old 8-inch disks, old printers, old modems, old S-100 memory and interface boards, old Apples, old terminals, etc.—shelved in old closets covered with old dust. Yet most of them could be as useful as they once were—back in the dark ages when they were state-of-the-art ... six or eight years ago.

All that's needed are interfaces to connect them to newer machines—hardware and software. Consider some possibilities:

"Obsolete" 8-inch floppy disks are almost free, but could still provide file backup for underprivileged computers.

S-100 computers and similar systems could become special-purpose controllers—e.g., printer buffers/controllers, or RAM-disks for current micros. They could certainly be arbitrarily sophisticated terminal controllers for those current PCs with infuriatingly limited RS-232 ports.

Once hardware interfaces exist, software is needed to read and write the older file formats of these antiques—software which would also allow easy transfer of data between new and old machines.

How to market 'em? Who needs 'em? Flea markets, small businesses more concerned with low cost than latest-generation functionality, unwealthy schools, forever financially strained nonprofit organizations, real "personal" computer users (those who don't deduct their computer equipment on their tax returns), the much-mentioned "computer poor" of this country and others, etc.

Tiny-Cost Site Licenses For Vocational Instruction And Cost-Effective Promotion

Great markets from little seedings grow:

Most software publishers studiously ignore a potent promotional opportunity for mainline production software packages—text editors, spreadsheets, databases, etc.

Numerous educational institutions would offer training in use of such software, if they could afford classroom-quantity multiple copies of it. This is particularly true for budget-strained community colleges, vocational institutions and high schools offering vocational courses.

Yet myopic publishers fail to recognize the dope dealer's dictum so profitably followed by IBM in the early '60s—"the first fix is (nearly) free." At the time, IBM was an also-ran in computing, far behind "big" companies such as Burroughs, CDC and Honeywell. Then, IBM chose to almost give its computers to schools and colleges—charging little more than a dollar a year to institutions willing to offer their students courses in using IBM machines.

And—surprise!—one to four years later, their graduates entered business and industry, newly trained in the "latest computer systems," and urging their less-knowledgeable managers to buy IBM gear, the gadgets they knew best how to use.

Software publishers: Offer almost-free site licenses for bulk copies of software used in vocational courses. It is good business, cost- effective promotion (account for it as an advertising expense) and is a positive contribution to society and the future.

Instructors and institutions: Rough-draft vocational programs and short-courses to teach major microcomputer applications—but avoid being product-specific. Submit them (and maybe a copy of this article) to a publisher of worthwhile software. Propose to implement the course using their software, if they provide essentially-free site licenses for instructional users. If they don't see the mutual benefit of such a fair exchange, seek a more enlightened competitor—one who does plan to remain in business.

Human Factors For Cruisers And For Parapalegics

Let's standardize automobiles' "cruise control"—a computer of sorts. Intuition and physiology might reasonably support this design:

A self-centering lever can easily be moved five directions—up, down, pull back, push forward, and press inward toward the steering column. Buttons are unnecessary, except perhaps a press-inward button on the end of a 4-way lever.

Since pushing forward is the most "difficult" action, safety dictates it should be the function that turns cruise control on, or re-enables it after temporary cancellation.

Pressing inward is easy and has no intuitive meaning, so let that cancel cruise control—one push to temporarily cancel; two pushes to turn it off entirely.

Pulling back is the easiest motion—clutching the fingers. Let pulling back slightly cancel cruise control temporarily—just as does pressing inward or pushing on the brake pedal (used by the more athletically inclined).

Let pulling back more—"whoa!"—begin to apply increasing pressure on the brakes, just as occurs when the brake is pressed. (The Gods never dictated that brakes be underfoot—it's only tradition born when leg muscle provided braking power.)

Finally, intuition implies that up increases speed; down decreases it.

With this one lever, cruise control is accomplished—and incidentally, feet become unneeded in a shiftless vehicle. (Clip and mail to your favorite auto maker.)

This design is herewith placed in the public domain, before some lunatic tries to patent it and sue everyone over its "look and feel." (Consider how the auto industry would have developed if one automaker claimed ownership of a stick-shift's "H" pattern; another owned the accelerator-on-the-floor concept, etc.!)

Myopic software publishers fail to recognize the dope dealer's dictum so profitably followed by IBM in the early '60s—"the first fix is (nearly) free."

Briefs Of The Month

Fantasy to be fabricated: We may see noise-cancelling mufflers that sense a noise-source's sound waves and create equal and opposite waves—thus "crushing" the original waves. (This gives new meaning to Californians' "catch a wave" concept!) Perhaps huge diesels will soon whisper down freeways with their engines surrounded by monster stereo speakers. (Rumored by John Wakerly to be a serious research project in the nation's rust-belt.)

Dr. Wakerly is also the one we reported in June as observing that "u learn" is an anagram of "neural"—attribution that was amputated by the page-fitter's scissors.

Future Fantasies Flaunted

Some of the not-yet-done projects currently under review for the next several columns include:

- Effective political applications of micros—wherein the author has some practical experience;
- Providing personal computers with access to EarthSat and WeatherSat data, and some related applications (why should weather-casters have all the fun?);
- Issues surrounding telecommunications for the hearing impaired, including discussion of desired enhancements, and review of that significant market (suggested by John Pilge of Santa Cruz); and,
- Suggestions interrelating television, videos, captioning ("subtitles"), and subliminal (painless) teaching of reading—of English and otherwise (idea from Anne Herbert of Mill Valley).

Support Intellectual Shareware

To share solutions, send your provocative proposals regarding these topics or anything else to Jim Warren, Realizable Fantasies, 345 Swett Road, Woodside CA 94062. Attribution for published proposals will be given to their authors, unless anonymity is requested. □

Copyright © 1988 by Jim Warren. All rights reserved. *Jim Warren founded the West Coast Computer Faire, the* Silicon Gulch Gazette *and* Infoworld *newspapers, Video Initiative, and the DataCast proposal for broadcast-based paperless electronic newspapers utilizing personal computers. He was the founding host of the PBS* Computer Chronicles *series, founding editor of* Dr. Dobb's Journal, *and founding president of the Microcomputer Industry Trade Association.*

You Can Whisper About How Good This Printer Is.

That's because Toshiba's P321SL Printer will raise your productivity, not your voice. It has a selective quiet mode and standard features you will rave, but not yell about. Taking full advantage of a 24 x 42 character matrix that's unequaled in the industry, other 24-pin printers, (not to mention any 9-pin relatives), will have to play follow the leader.

Toshiba built it because you asked for it.

"MAKE IT EASIER TO USE." Say goodbye to the DIP switches in your life with front panel selection of type fonts, pitch, emulation, quiet mode and more.

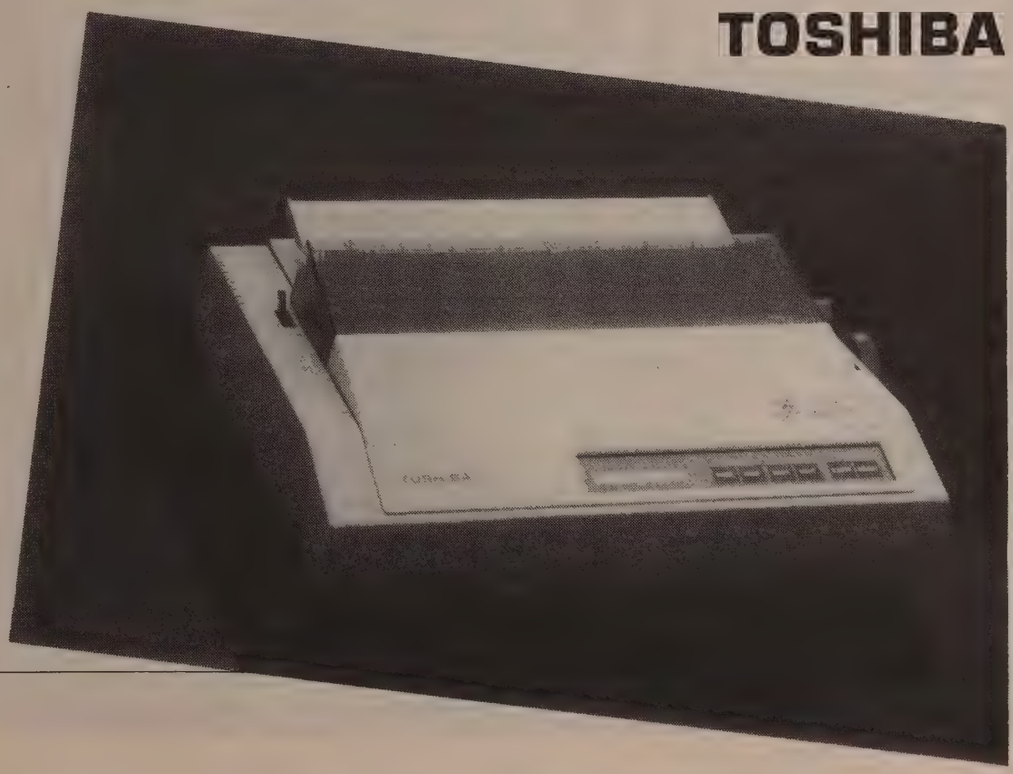
"BE SURE IT HANDLES LOTS OF SOFTWARE." The P321SL handles practically any software, so you won't have to pay extra for exotic print drives. With a finger-tip you can choose from three standard emulations: IBM PROPRINTER, QUME SPRINT 11 or TOSHIBA P351. You can create truly unique text with the selection of five resident fonts, two more via the front leading card slot and two more from disk.

"PROVIDE ENHANCED PAPER HANDLING." Forget about paper changing hassles. The fan-fold bypass feature lets you feed single sheets without pulling out the continuous form paper. Plus, with the auto-load lever you can position either type of paper quickly and precisely.

"KEEP IT AFFORDABLE." For slightly more than a 9-pin model, you can enjoy the printer you've designed yourself. The P321SL retails for $749.

"GIVE IT ATTRACTIVE STYLING." At a streamlined 16.3"W x 3.9"H x 15"D and only 17 lbs., it's the heavyweight champ pound for pound. You get great graphics with resolution as high as 180 x 360 DPI. It can also use compressed print so you can put 132-column spreadsheets on convenient letterhead size paper. Toshiba is where standard features set industry standards. Consult your nearest dealer listed below to get your printer today.

TOSHIBA



Now the printer that you designed is ready at one of the dealers listed below!

Computown
760 Market St.
Suite 219
San Francisco, CA
(415) 956-8696

EFI's Discount Computers
3441 Golden Gate Way
Lafayette, CA
(415) 283-1700

Noe Valley Computers
1082 Sanchez
San Francisco, CA
(415) 641-7805

GC Micro
6100 Redwood Blvd.
Novato, CA
(415) 898-7000

Shoreline Software and Computers
1125 A Street
San Rafael, CA
(415) 459-5800

Whole Earth Electronics
2940 7th Street
Berkeley, CA
(415) 843-1700

Whole Earth Electronics
863 E. Francisco
San Rafael, CA
(415) 549-3533

Whole Earth Electronics
401 Bayshore Blvd.
San Francisco, CA
(415) 285-5244

Whole Earth Electronics
1975 Diamond Blvd.
Concord, CA
(415) 686-2270

GATES DISTRIBUTING INC.
5221 Central Avenue
Richmond, CA 94804
415-526-2345
FAX 415-526-3714

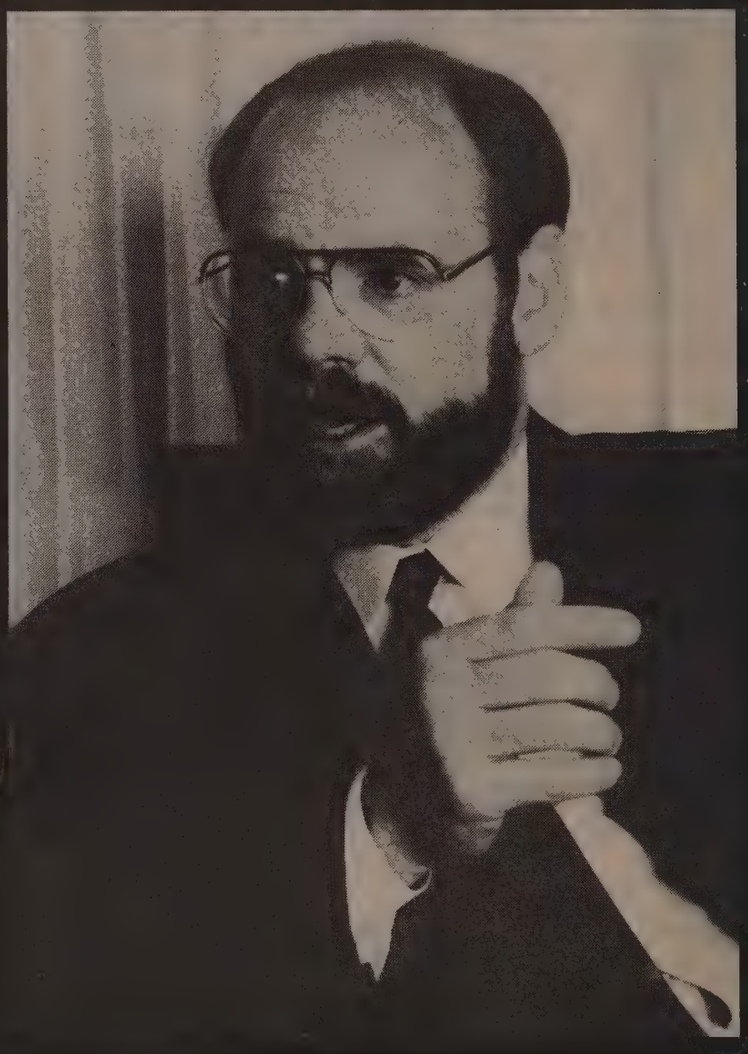
BROUGHT TO YOU BY

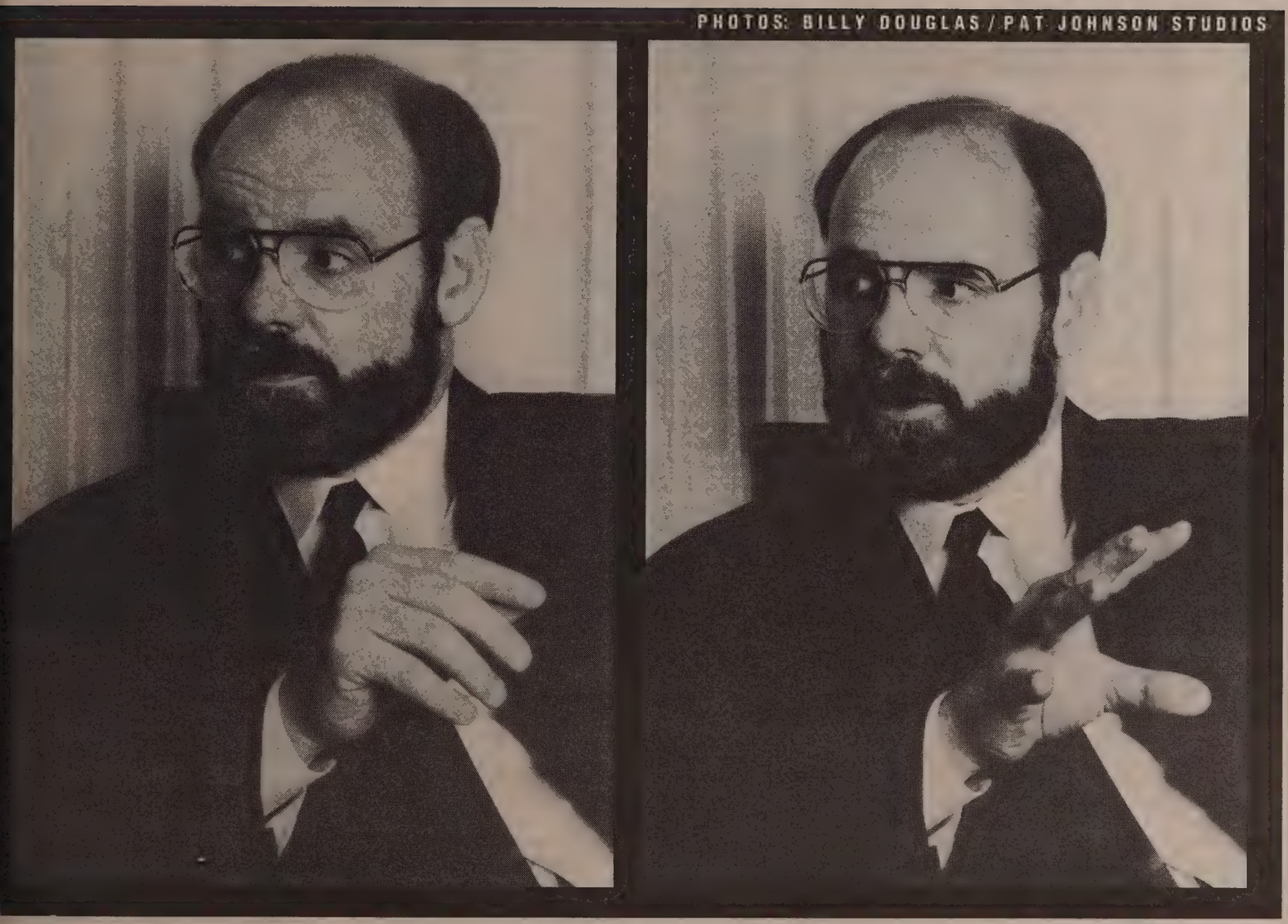
Gates DISTRIBUTING

WORK GROUPS IN BUSINESS COMPUTING

Symantec's Gordon Eubanks On The Multi-User, Multi-Vendor Office

By Mary Eisenhart





PHOTOS: BILLY DOUGLAS / PAT JOHNSON STUDIOS

Poised to take advantage of the impending groupware revolution and face the challenge of multi-vendor work environments, Symantec is a teamwork-oriented company, short on hype and long on productivity. Its products, for instance, are developed by teams of people with individual expertise in every area that affects the product's life, from concept to sales, thereby avoiding the all-too-common pitfall of technical and marketing departments working at cross-purposes. It now consists of four divisions, united in a comprehensive strategy for growth in a rapidly-changing, increasingly complex software market.

The company's history is one of careful strategic planning dating almost from its foundation in 1982. In that year, Gary Hendricks founded Symantec; at the same time, Denis Coleman and Gordon Eubanks started another company, C&E Software. As it turned out, the two startups shared common venture capitalists, and in 1984, the VCs had an idea. Recalls Eubanks, now president and CEO, "they said that the strategies that we, i.e., C&E software, were on, and where Symantec wanted to go were very similar. We had very good development technology, and Symantec had very good marketing experience and a lot of AI technology, so why didn't we put the two companies together, and form one company?"

The collaborative effort as a result of the merger yielded the first version of *Q&A*, a revolutionary file manager, now in its third version, which offered the then-unique ability

to use natural language to access database records. Says Eubanks, "We wanted to target the very easy-to-use market, but with full functionality. *Q&A* uses natural language as one of the ways to access data; you actually ask questions in English. So you can have a database of hundreds and hundreds of records, of, say, people in a company, and ask the question 'What's the average salary?' or 'Who earns more than Bill?' It takes English and translates it into the normal algebraic query languages that databases use."

Realizing, however, that being a one-product company was a risky undertaking, Symantec began to consider expansion possibilities. In 1985 it created Turner Hall Publishing, which published the work of other developers. Today Turner Hall's product line includes a variety of utilities for Mac and PC, along with add-in enhancements for Lotus 1-2-3.

Last year saw rapid expansion via acquisition, as Symantec acquired THINK Technologies, whose products include the Mac and PC email and file transfer package *InBox* and the highly renowned Lightspeed C and Lightspeed Pascal programming environments, and Living Videotext, whose *ThinkTank* and *MORE*! have garnered awards, critical acclaim, and a secure foothold in the offices of America. Also in 1987, Symantec acquired Breakthrough Software, which developed and markets *Time Line*, the leading project manager in the PC market.

CEO Eubanks is, not surprisingly, a team-oriented manager. He's characterized the company as not a big fish gobbling up little fish, but as a whole school of fish swimming in the same direction. In an industry where egos often run rampant, Eubanks is quick to deflect attention from himself and praise the people of Symantec, enthusiastically and by name. Nonetheless, he agreed to discuss the general state of the industry, the challenges ahead, and how Symantec plans to address them.

What do you see as the common denominator among your various companies and product lines?

They're all personal productivity products. We don't view ourselves as being three or four companies brought together, we view ourselves as one company with a number of different product lines. I think the common denominator, besides personal productivity, is that we really strive to establish the leading product in a category. That is one of our prime strategies.

It worked for Lotus. . .

Of course it worked for Lotus, but I think it's also going to work for companies like Symantec, where we may not have a $300-million-a-year product, but have leading products that can be profitable and can be successful in the market.

We also believe very much in looking to the future. You want to know what's on the horizon, focus on the horizon, not just try to do just what's here today. That's what's driving us into the Macintosh technology and getting expertise in these new enviroments that are going to be the leading technology of the next five years. I think as a generality you can say that the industry's going to move from personal productivity into group productivity, from fulfilling personal needs to fulfilling the group needs, or serving the common needs of groups. That kind of environment. We're moving into the new user environments like Macintosh and Presentation Manager; and we're moving from just personal productivity products to products that serve the common needs of the group.

What new challenges does that present?

Well, it's a lot harder to develop. The graphical user interface is much harder, and when you do group products versus single-user products you have to be aware of a net, really have network-aggressive applications. That in itself takes a lot more development expertise.

So we're tackling two things at once—the graphical user interface like Macintosh is more difficult to develop for, and networks are more difficult to develop for. In the acquisitions of companies like Living Videotext and THINK, we got some really very talented developers—I wouldn't want to exclude any of them, but Peter Winer and Michael Kahl are certainly two people who have added great value in our development capability, and help us meet the challenges of the next five or ten years.

We started out to do a personal productivity product, which turned out to be *Q&A*, and went into doing, I think, some very smart acquisitions to bring strong technology into the company, to get us ready for the next five years, where we're really at what I call an inflection point. We're really going to change. IBM machines have been the dominant machines; Macintosh is making major inroads. The next generation is, I think, going to show much more strength for Macintosh and a series of products that are going to use graphical user interfaces similar to what the Macintosh does, and provides a lot more power to the users, a lot more functionality in the applications.

Apple has said that what we're going to see in the future is a multi-vendor environment rather than a single-vendor standard as existed with the IBM. Do you see that happening?

John Sculley speaks of a multi-vendor environment, and I agree with him completely.

I think IBM is going to be very successful; I'm a very strong supporter of OS/2 and Presentation Manager, but I do believe we're working in an environment where there will be different platforms, where we'll see Macintoshes and IBM machines and probably UNIX machines like the Sun workstations, running, perhaps, Open Look, which AT&T and Sun have enforced, and these machines will all be on networks and sharing data. It's hard to develop for networks, it's harder to develop for graphical user interfaces, and now on top of that applications have to run on different platforms, and always using a sort of a watchword of design to the highest common denominator to a platform, not to a low common denominator that works on all of them.

What this all really sums up when you take all the jargon away is that the development challenge has gotten much harder. We're really facing a mountain, not just an obstacle, when we talk about developing. It takes more teamwork, it takes strong management and leadership, and really strong experience in developing for these environments. But I really do believe that we will see a much more heterogeneous environment of computing.

I'm not anti-IBM, I don't predict their demise, I actually predict that they'll be successful in the next five years. I also believe that Apple will be successful, and certainly Sun has been successful to date in its market and has a reasonable chance in the personal computer market. NeXT has a very reasonable chance—Steve Jobs is brilliant visionary. AT&T can't be counted out. When I normally talk about the IBM, I'm really talking about IBM and the really fine companies that have built a business around doing compatible machines. That includes Compaq, Zenith, Tandy, Dell Computer, and many, many others.

There's a certain amount of confusion these days, because you've got the DOS/Enhanced AT standard, which continues to grow, and OS/2, and Macintosh, and UNIX/XENIX. Who should be using what, in your opinion?

In the mainstream business, professional and government use of personal computers, I think people might well be using DOS predominantly, (and the follow-on, OS/2), or the Macintosh and its family of products. I think both of those serve the business needs very well. I think they serve them because that's where the real applications are.

The thing I tell my friends who ask me is, really decide what you want to do with a personal computer. Read the magazines, the reviews, talk to people who use personal computers. The adage "Walk before you run" really does apply.

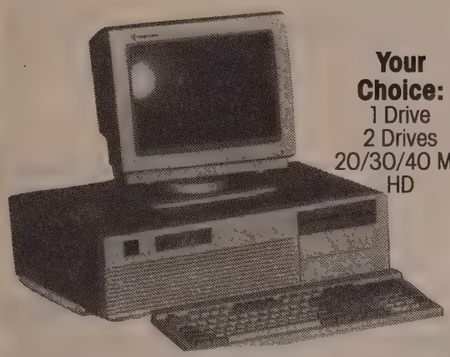
For a small businessman, their first inclination is "let's set up a whole extensive accounting and inventory." I say, "there's nothing wrong with that. But perhaps you could do something to get experience that was a little less ambitious but very valuable."

The most important thing to small

"The real truth of the matter is that computers are a tool, not an end in themselves. And if businessmen spend more time trying to fight the computer than they do running their business, then they won't be successful."

AMERICA'S #1 SOFTWARE DEALER
PROGRAM DISCOUNT CENTER

SAMSUNG XT/AT



Your Choice:
1 Drive
2 Drives
20/30/40 MB HD

Samsung XT/AT comes complete with:

- High-resolution monochrome monitor
- Selectric® -style keyboard
- 8088-2 Microprocessor (4.77 MHz and 7.16 MHz)
- 512K RAM expandable to 768K on the motherboard
- Open socket for 8087 co-processor
- At least three full-size IBM® -compatible expansion slots
- Serial and parallel ports
- Color Graphics and Hercules™ Monochrome Graphics Emulation
- MS-DOS® and GW BASIC®

CALL FOR BEST PRICE

AST PREMIUM/286

#1 RATED AT
"EDITOR'S CHOICE P.C. MAGAZINE"
50% faster than 8 MHz IBM PC AT. 10 MHz, 0 Wait
100% Compatible

AST RESEARCH INC.

IN STOCK NOW

Authorized Retail Dealer
CALL FOR BEST PRICE

Wordst★r 2000 Ver. 3+
$Low
and
$25 Rebate
Direct from Manufacturer!

WordPerfect 5.0
$249

YOUR CHOICE
3½ ⇦ ⇨ 5¼
NO PROBLEM!

Gram•maf•ik II
$45
While Supplies Last!

Logitech Bus or Serial Mouse
$79.95
While Supplies Last!

VP Planner
$45

FREE! Get Your Business Logo Scanned into Dr. Halo File or PC Paintbrush or Windows. (S.F. Store Only). Call for Details.

Complete PC
Hand Scanner.
Free Stationery Software!

List $249
Special $199
While Supplies Last!

• GEM Desktop Publisher and the complete GEM line make your IBM PC emulate the Macintosh • We have the complete GEOS line **IN STOCK** for Commodore • Apple, Macintosh, IBM and Commodore software in stock. Call for your needs now!

Apple and Macintosh are trademarks of Apple Computer, Inc. IBM is a trademark of International Business Machines, Inc.

PRICES SUBJECT TO CHANGE.

Software City®

1500 Monument Blvd.
Concord, CA 94520
(415) 676-6662
Mon-Sat 10 AM-6 PM

OVER 100 STORES NATIONWIDE
2 STORES SERVING YOU LOCALLY

CORPORATE ORDERS PLEASE CALL (415) 676-2516

155 Main Street
San Francisco, CA 94105
(415) 543-0543
Mon-Fri 9 AM-5:30 PM
Sat 10 AM-4 PM

business is to get repeat customers. The story I tell is that you can't get out of a Tandy store without leaving your name and address, because they know the value of repeat business and they're one of the nation's premier retailers. And so for many small businesses what I recommend is to get a product like our *Q&A* —there are other products, but of course I recommend *Q&A*(laughs)— and use it to maintain a customer list and keep in touch with them. Generate additional business from known, proven customers, get familiar with using personal computers, and then move into another application. This is something you can get your hands around.

Because the real truth of the matter is that computers are a tool, not an end in themselves. And if businessmen spend more time trying to fight the computer than they do running their business, then they won't be successful. Small businesses can use *Q&A* to keep track of customers, mail periodic letters or flyers to them—you can get very sophisticated, keep track of their particular preferences. Let's say a dress shop has some customers who are size 4, and they get in some 4s which are normally not common. They just do a mailing saying "Dear Sally, just a short note to let you know that we got a really good selection of size 4. I know there'd be some things there you'd really like. Why don't you come over this week? Sincerely, Meg."

That is good marketing. Not complex, but it helps small business. And the applications to do that are predominantly on the Macintosh and on DOS machines. In the next few years we'll have a transition where a number of people go from DOS into OS/2 and OS/2 with Presentation Manager. It's a natural transition.

One of the things I like very much about OS/2 is that it provides a very good link to DOS, you can run DOS applications, but in addition it solves *today* the biggest problems people had with DOS. It solves the 640K memory problem, it solves the ability to get more than one application in the computer at a time, and it solves the ablity to switch quickly between applications. So what is really sort of surprising me is that two years ago people were *clamoring* for these things. Now everyone's saying, "Oh, I don't know about OS/2, is it really worth it?" I think they're kidding themselves. I think that it does add value, it will add value. Companies like Symantec are committed to port our DOS applications into OS/2; for instance, *Q&A* and *ThinkTank* are available on OS/2 as well as DOS, and we will continue with other applications.

That's what I tell a small businessman. For a professional, I think, with personal computers, they should take a hard look at the way they do business. Most professionals are people who have to organize a lot of data, switch around rapidly, look at it a lot of different ways. I think products like our *GrandView* product or Lotus' *Agenda* product, which is being categorized as personal information managers—those kinds of products I really do recommend to professionals.

Both those products are excellent portable computer products. I think a portable often is an excellent choice for a professional. And of course if you do any kind of word processing, it only takes a few seconds to see the value of a word processor, and the same thing for a spreadsheet.

One of the obvious problems with the acceptance of OS/2 is that when it was announced, memory was cheap. The world has changed in the meantime, and RAM is now prohibitively expensive for many people. How serious do you think this is as a long-term problem?

I don't think it's a real long-term problem. It's still significant—it's hurting the Mac, it's hurting OS/2. It is a short problem; going into the second quarter of '89 at the latest, I think we'll see some real easing of the price and increasing availability. The world has a remarkable ability to deal with supply and demand issues in a free economy.

Another factor is that IBM makes their own DRAMS, so their supply is more than adequate. So I think there will be memory for our machines. I think, though, that the DRAM shortage has a definite impact on the OS/2 market; it's unfortunate, but we will see our way through this. We're not going to be faced long-term with a shortage of memory or processors or any other components of the machine.

IBM had a press conference recently where it announced that it had shipped its two-millionth PS/2 machine. Who's buying them?

All segments of the market. Certainly the corporations are buying them, but businesses are buying them, educational markets are buying them. I think that PS/2s are being bought across the board.

The PS/2 is a fine machine. I do not believe that the Micro Channel itself offers any technical advantage over the traditional bus for running either DOS or OS/2. That's a very technical discussion; there are some second-order advantages and disadvantages, but to the average user, your readers, I think they should choose the machine that they want because of the availability of the software, the add-on boards, the pricing of the machine for their budget, the support and service, and I don't think that they should let the Micro Channel be a deciding factor either in favor or against.

What do you see as the likely scenario for PS/2 clones?

I think that if really topnotch companies like Tandy have announced clones, they have every intention of delivering them, compatible Micro Channel machines, and I think they will be successful doing that. I think Dell Computer and other companies will deliver the machines. I believe it will happen.

Like a lot of things in life, it'll happen slower than they think, perhaps, but I really don't think that a company with Tandy's integrity and reputation would make that announcement if they weren't very confident that they could deliver.

Where there's a demand, people will find ways to provide equivalent products. I don't think it'll hurt IBM that much. I think that in fact it probably will help the Micro Channel, it'll help with additional add-on boards, and it'll help bring the price of the add-on boards down. One of the things about the Micro Channel is that the tolerances on the boards and the size of the boards make it more capital intensive and more of a challenge to build boards for the Micro Channel. I think the larger the market as a whole is, the better overall for IBM.

What do you think's going to happen with Presentation Manager vs. A/UX vs. Open Look?

I think that there will be multiple standards. I think Apple will extend its operating system to include multitasking. It already has MultiFinder, which is a very, very important first step. OS/2 has multitasking. I think we will see both the Macintosh and OS/2 Presentation Manager being dominant in operating environments, both providing multitasking, both being significant, important environments.

The graphical user interface is extremely important, not because it's necessarily per se easier to use, but because it provides a standard, a consistency. And what is important, if you want to go from one application to the other, is the consistency.
And also with the graphical user interface, like the one Apple has developed for the Macintosh, you have the ability to seamlessly integrate text and graphics. I think that's very important in today's market. People demand that level of sophistication and that level of prettiness in the output. Typewriter output doesn't make it any more. Integrating text and graphics, and in the future video—we're moving to where we will integrate these technologies together, and this new generation of operating environments, Macintosh, Presentation Manager, and perhaps NeXT and Open Look, certainly will be important. These things will be the next generation, and they will enable the new generation of applications, built on these operating environments and serving group needs instead of individual and personal needs.

This is important not only to the corporation or to the medium-sized business, but it's also important to the small businessman who starts out with one personal computer, starts an application like using *Q&A* for names and addresses. Soon they need two

"Going into the second quarter of '89 at the latest, I think we'll see some real easing of the price and increasing availability. The world has a remarkable ability to deal with supply and demand issues in a free economy."

EXCLUSIVE COMPUTERS HEADQUARTERS

TEK COMPUTER

THE VALUE LEADER IN COMPUTERS

AST RESEARCH INC. PREMIUM/386

- 40 MB VGA System
- 386/20 MHz
- 1 MB memory
- 40 MB HD
- VGA card
- NEC Multisync

$4740

AST RESEARCH INC. PREMIUM/286

40 MB EGA System
5154 Casper EGA Monitor

$2540

MACINTOSH™

Mac SE 2 Dr*	$2099
Mac SE 20 MB*	$2599
Mac Plus	Call
Mac II Mono System	$3450
Laserwriters SC/NTX	Call

*Includes standard keyboard

Now Here

Tek Computers
HIMS 386
20/16 MHz System
1 Meg & 4 Meg
CALL FOR PRICES

LEASE TO OWN

Name brand computers costing $1000.00-$10,000.00.
From $32 per month to $299 per month, subject to credit approval.

COMPUTERS

AST

Model 80	$ CALL	Model 170	$ CALL
Model 90	$ CALL	Model 300	$ CALL
Model 120	$ CALL	Model 340	$ CALL
Model 140	$ CALL	Model 390	$ CALL

IBM PS2

Model 30, 2 drives	$1275
Model 30, 20 Meg	$1690
Model 50	$2469
Model 60, 40 Meg	$3250
Model 60, 70 Meg	$3864
Model 80, 40 Meg	$4140
Model 80, 70 Meg	$4830
Model 80, 115 Meg	$7999

Compaq

Deskpro 286, Model 1	$1699
Deskpro 286, 40 Meg	$2499
Deskpro 386, 40 Meg, 16 MHz	$4299
Deskpro 386, Model 60, 20 MHz	$5495
Deskpro 386, Model 130, 20 MHz	$6795
Deskpro 386, Model 300, 20 MHz	$9168
Portable, 2 drive	$1574
Portable II, Model 4	$2999
Portable III, Model 20	$3499
Portable III, Model 40	$4159
Portable 386 Model 40	$5919
Portable 386 Model 100	$7399

Toshiba Laptops

1100 Plus	$1499	1000	$749
3100, 20 Meg	$2999	1200	$2350
3200	$3895	5100	$4989

NEC Laptops

NEC Multispeed HD	$2299
NEC Multispeed EL	$1499

FLOPPIES, DRIVES & TAPES

½ height floppy drive	$99
Miniscribe 20 Meg ½ height w/cont.	$329
Miniscribe 30 Meg ½ height w/RLL	$345
Seagate 20 Meg ½ height hard drive	$269
Seagate 30 Meg ½ height w/RLL	$299
Seagate 40 Meg ½ height	$425
Seagate 63 MB ST-277	$729
Everex 60 MB int.	$654
Everex 60 MB ext.	$759
Everex 125 MB ext.	$1345
Iomega Bernoulli 10+10	$1395
Iomega Bernoulli 20+20	$1629
Iomega 20 Meg ½ height int.	$995
Iomega 20+20 external 5 ¼	$1795
Irwin 10 Meg tape backup	$259
Irwin 20 M/40 M internal tape	$399/539

PRINTERS

Citizen

120D	$158	MSP40	$307
124	$484	MSP45	$448
180D	$177	MSP50	$374
224	$657	MSP55	$478
MSP10	$275	Premiere 35	$466

IBM

Pro Printer II	$399	Quietwriter III	$1125
Pro Printer X24/XL24	$525/639		

Diconix

150P by Kodak	$309
300	$499

Epson

EX800	Call	LX800	All
EX1000	for	LQ850	Epson
FX86e	Best	LQ1050	Models
FX286e	Price	LQ2500	in Stock

Call for Accessories

NEC

Color P6	$539	Color P7	$699
P6 80 col	$439	P7 136 col	$609
P5XL	$974	P9XL	$1068
P2200	$364	8850	$1097
3550	$729		

Okidata

ML 182S	$258	ML 182P	$229
ML 193 Plus	$456	ML 192 Plus	$314
ML 293 Plus	$516	ML 292 Plus	$377
ML 393	$979	ML 294	$747

Toshiba

P321SL	$499	P351-2 S/P	$935
P341SL	$668	P351-2 Color	$1199
P351	$650	P351SX	$1129

LASER PRINTERS

AST Turbo Laser	$2999
H-P Laser Jet Model 2	$1699
H-P Deskjet	$749
NEC LC890 PostScript	$3358

MODEMS, COMMUNICATIONS & EMULATIONS

AST 5251-11 Plus	$619
Everex 1200B/2400B	$109/199
Hayes 1200/1200B	$289
Hayes 2400/2400B	$424
IBM 1200	$309
Smartcom/Crosstalk	$58/96

MISC. & ACCESSORIES

A-B switching box (par or serial)	$39
Kensington Masterpiece	$99
Keytronics 101	$104
Quadram Micro Fazers	$140
Printer Cable (IBM to Centronics) 6 ft.	$14
XT power supply 150 watt	$69

NOVELL NETWORKING

Starter Kits

Western Digital 3 Node LAN kit w/Western Digital software	$924
G-Net 86 w/keycard	$1593
Arcnet 86 starter kit	$1811
Ethernet 86 w/keycard	$2152
Entry-level 286 starter kit, 4 users	$599
Entry-level 286 starter kit, 8 users	$Save

Kits include 2 network cards, keycards, software and manuals. Call for pricing on other kits.

Interface Cards

Arcnet PC110 LANBoard	$199
Arcnet PC210 LANBoard	$277
Ethernet interface connector	$349
Ethernet Plus board (for 286)	$724
G-Net interface card w/cable	$319

Accessories

Arcnet Passive Hub	$85
Arcnet Active Hub	$549
Novell 286 software w/keycard	$1569
SFT Netware Level I	$2148
Nondedicated Netware Software 286 w/keycard	$1569

VGA & EGA PRODUCTS

EGA Monitors

Compaq enhanced graphics monitor	$584
NEC Multisync II	$599
NEC Multisync Plus	$888
NEC Multisync XL 19 inch	$1974
Casper	$425
Sony Multiscan	$625
AST EGA	$521

VGA Display Cards

AST VGA	$314
ATI VGA VIP	$307
Genoa VGA	Save
Paradise VGA	$297
Quadram Ultra VGA	$299
Compaq VGA	$449
Video-7 VGA	$314

EGA Display Cards

ATI Wonder Card	$199
Genoa Super EGA Hi-Res 800x600	$249
NEC GB-1 640x480	$249
Orchid EGA card	$329
Paradise Auto Switch EGA 350	$179
Paradise Auto Switch EGA 480	$199
Everex EGA	$199
Quadram Prosync	$314
Video 7 Vega Deluxe	$268

CHIPS

8087-2/8087-3	Best Prices Call
80287-6/-8/-10	Best Prices Call
80387-16/80387-20	Best Prices Call

MONITOR INTERFACE CARDS

Genoa Spectrum (color monographic w/p)	$168
Hercules color card w/p	$146
Hercules monographics plus w/p	$179
Hercules Incolor board	$329
Monographic w/p	$89

DRIVE CARDS

Miniscribe 30 Meg Flashcard	$425
Mountain 20 Meg/30 Meg	$549/819
Plus Development 20 Meg.	$499
Plus Development 40 Meg.	$799
Western Digital 20 Meg	$399

DRIVES FOR ATs & 286s

Miniscribe 40 Meg 28ms	$599
Miniscribe 80 Meg 28ms	$799
Priam 40 Meg hard disk	$669
Priam 60 Meg hard disk	$798
Priam 130 Meg hard disk	$1989
Seagate 4038 30 Meg hard disk	$499
Seagate 4051 40 Meg hard disk.	$599
Seagate 4096 80 Meg hard disk	$790
Seagate 4053 40 Meg	$699
1.2 floppy drive	$110

SOFTWARE

Lotus 1-2-3/Hal/Metro	$299/120/85
Symphony	$410
Framework 2	$365
D Base III+	$395
WordPerfect 4.2	$219
Microsoft Windows	$69
Xerox Ventura Publisher	$499
Aldus Pagemaker	$465
Multimate Advantage	$440
Migent Software	Low

COLOR GRAPHIC MONITORS

Amdek color 600T/722	$349/444
IBM PS2 color/enhanced	In Stock
Magnavox 14" RGB	$238
Samsung color	$289

MONOCHROME MONITORS

Amdek 410A	$149
Amdek 1280	$679
Compaq monochrome monitor	$188
IBM PS2 mono monitor	$199
NEC Multisync GS	$210
Samsung Amber	$89

MICE

Logitech Logimouse Bus Version	$109
Logitech Logimouse C7	$89
Logitech Logimouse C7 w/publisher	$124
Microsoft Mouse (Bus Version)	$119
Microsoft Mouse (Serial) w/Windows	$149
Mouse Systems (Serial Version)	$108
Mouse Systems (Bus Version)	$116

139 Kearny (and Market)
San Francisco, CA 94108
(415) 362-6870

FAX
(408) 296-7499

2740 El Camino Real
Santa Clara, CA 95051
(408) 296-0455

All Good While Quantities Last • Prices Subject to Change • Cash Prices

USM SPECIALS

Seagate Specials

	Qty 1	Qty 12
ST-225 20MB, 65MS, HH	$209	$199
ST-238R 30MB, 65MS, HH	219	209
ST-125 20MB, 38MS, 3.5"	229	219
ST-138 30MB, 38MS, 3.5"	309	299
ST-251 42MB, 38MS, HH	339	319
ST-251-1 42MB, 28MS, HH	409	399
ST-277R 65MB, 38MS, HH	449	429
ST-4053 44MB, 28MS, FH	469	439
ST-4096 80MB, 28MS, FH	599	569

Western Digital Controller Specials

XT Gen	$59	WA2	109
WX1	69	DTC 5280	119
27X	69	DTC 5287R	159

Great Buys

	Qty 1	Qty 12			
Micropolis 71 MB, 28MS	599	569	NEC Multisync GS	189	179
Paradise VGA Plus	244	229	Archive 40MB Tape Backup	339	309
Paradise EGA 480	154	149	AST 286/386	Call	
NEC Multisync II	579	559	Mylex Motherboards	Call	

Please call for complete system configuration.

USM **USM DISTRIBUTORS** (415)-952-5885
1101 Grandview Drive
So. San Francisco, CA 94080

MicroCom Systems

OUTSTANDING SOFTWARE

For IBM PC's and Compatibles

$3.50 PER DISK SMALL QUANTITIES — **$3.00** PER DISK FOR TEN OR MORE

$1 OFF 5 DISKS OR MORE WITH THIS COUPON

- ☐ **BUSINESS 1**—EZ-Forms business form generation.
- ☐ **CAD 1**—Altamira, 4 color object oriented drawing prog.*
- ☐ **COMM 3**—Compression and archival utilities.
- [5] **COMM 4a,b,c,d,e**—(5 disks) RBBS Bulletin Board System 14.1D.
- [2] **DATABASE 1a,b**—(2 disks) The File Express menu driven general purpose database.
- ☐ **DATABASE 3**—The pBASE relational database.
- ☐ **EDUCATION 1**—Interactive DOS tutorial for new PC users. Makes learning DOS painless
- [2] **FINANCE 1a,b**—(2 disks) PC Accountant 2.0 personal bookkeepping/finance management.
- ☐ **GAMES 1**—3-D PacMan, Kong, SpaceWar, JanitJoe.*
- ☐ **GAMES 2**—Qubert, Pango, Centipede, Monopoly.*
- ☐ **GAMES 3**—Blackjack, Arm Chair QB, and Empire
- ☐ **GAMES 4**—Castle, StarTrek, and the original Adventure.
- ☐ **GAMES 5**—The Hack adventure game from the universities. Like Rogue, only more complex.
- ☐ **GAMES 6**—Pinball, Othello, Sopwith (fly one).*
- [2] **INFO 1a,b**—(2 disks) Cooking recipes database with keyword/ingredient retrieval prog. Add your own recipes.
- ☐ **LANGUAGE 5**—Turbo Pascal interactive debugger, pop-up help, formatters, et cetera.
- ☐ **LANGUAGE 7**—Complete Pascal interpreter, compiler, and debugger. Great for learning Pascal!
- ☐ **LANGUAGE 8**—Xlisp 1.7, the standard for AI langs.
- ☐ **MUSIC 1**—Many clever tunes, and an excellent color graphics music editor.
- [2] **MUSIC 2a,b**—(2 disks) PianoMan 3.0 polyphonic music recording and playback program.
- ☐ **ORGANIZER 1**—DeskMate, a Sidekick clone, and the Judy calendar program.
- ☐ **ORGANIZER 3**—The PC-Outline Resident windowing outline editor/thought organizer.
- ☐ **PICTURES 2**—High res. digitized pictures. Graphics req'd.
- ☐ **PINUP 2**—Provocative high res. pinups. Graphics req'd.
- ☐ **PRINTER 1**—Font & sideways utils, spooler, banner mkr.
- ☐ **UTILITIES 1**—A collection of invaluable DOS utilities.
- ☐ **UTILITIES 2**—More invaluable DOS utilities. Too many to list here!
- ☐ **UTILITIES 3**—Complete set of debugging and diagnostic utilities.

NEW RELEASES/UPDATES

- [2] **CAD 2a,b**—(2 disks) Advanced 2D/3D drafting program. 640k.*
- ☐ **CAD 3**—The PC-Flow, flowchart creation program.*
- [2] **COMM 1a,b**—(2 disks) Version 2.4 of the ever-popular Qmodem.
- [2] **COMM 2a,b**—(2 disks) Procomm 2.42, an excellent modem program with terminal emulation.
- ☐ **EDUCATION 2**—Learn the Presidents, States (and capitals) and the periodic table.*
- ☐ **EDUCATION 5**—Learn Origami, the Japanese art of paper folding, with step by step animated instructions.*
- ☐ **EDUCATION 7**—Learn Basic with this interactive Basic tutorial.
- [2] **FINANCES 3a,b**—(2 disks) Express Calc 3.12, a powerful spreadsheet program.
- ☐ **GAMES 8**—The Striker helicopter attack game, and Risk, the game of world domination.*
- ☐ **GAMES 9**—EGARisk, world domination in very high res. EGA required.
- ☐ **GAMES 10**—Solitaire, Golfing, and Sailing in the Bermuda triangle.*
- ☐ **GAMES 12**—Chess, Backgammon, and Wheel of Fortune. Graphics not required.
- ☐ **GRAPHICS 1**—Record and play back screen images! Excellent for demo creation, training, etc.*
- ☐ **HUMOR 1**—Practical, impractical & other jokes.
- [2] **INFO 2a,b**—(2 disks) Zip-Phone, national areacode/prefix to zip-code cross ref. A must for businesses.
- ☐ **LANGUAGE 1**—PDProlog 1.91a, an advanced language for artificial intelligence applications.
- [2] **LANGUAGE 3a,b**—(2 disks) The A86 2.18 macro assembler and debugger. A complete assembly development system.
- ☐ **LANGUAGE 10**—Augusta, a subset of the Department of Defenses' new programming language ADA.
- [2] **LANGUAGE 11a,b**—(2 disks) Forth-83 2.1 4th generation programming language.
- ☐ **SHELL 4**—Automenu customizable menu facility, and the HDM II 4.04 hard disk menuing system.
- ☐ **UTILITIES 5**—Utilities for formatting, parking, and optimizing hard disk drives.
- ☐ **UTILITIES 6**—Advanced utilitiess including Dpath, Esc, Hotdos, Pushdir and Popdir. Resident program utilities and more.
- ☐ **UTILITIES 7**—More Advanced utilities including MasterKey (undeletes files from hard disks), Killdir.
- [2] **WORD 1a,b**—(2 disks) PC Write 2.71, a powerful word processing system, with built in spell checker.

*Disks so marked require color graphics.

MT-8/88

Cost of Disks _____
CA Res Sales Tax _____
Ship/Handling $1.00
Total Enclosed _____

MicroCom Systems
3673 Enochs Street, Santa Clara, CA 95051
(408) 737-9000
M-F 7 am-9 pm, Sat-Sun 8 am-5 pm

people for doing data entry, and they have to be able to say, no problem, *Q&A* works on a network, it's multi-user. The next step is to say that on that network I want an OS/2 machine for some reason, like maybe my accounting system uses it, and I also want a Macintosh, and yet people want to be able to use *Q&A* from all of those environments, on the network, sharing the same data.

It's a technology that really opens the door and the reason that these environments are possible is because of the new generation of hardware, the Motorola 68020, 68030, the Intel 80386 and follow-on processors, the SPARC architecture that Sun has developed. The large memory chips—there will be 4-meg DRAMs in the not-too-distant future. Sixteen megabytes will be the standard memory configuration for personal computers within a few years. And disks will get extremely fast and high-capacity; they'll be optical instead of magnetic. Removable read-write optical disks, 100, 200 megabytes, you throw them in your pocket or your briefcase or your purse or whatever.

How far away do you think that is?

That is 12 months away on the disks. Less than 12 months for read-write optical, high capacity, high performance. Now they already have low performance read-write optical.

The read-once optical was not a successful broad-based technology. It's very important in some applications, but read-write optical will be very important in the next year or two. All these things are bringing this inflection point I talked about earlier. New operating environments enable new applications.

Are you planning on doing anything with either UNIX or the DEC VMS platform?

We're looking at the UNIX opportunity, specifically Open Look. We think it has tremendous merit as a standard and an operating environment, and one that we would be very proud to have products running under. We haven't made any announcements or public commitments as of yet.

We're also supporting another operating environment that I think will be important—Deskmate from Tandy. I think Deskmate is something that has not gotten a lot of visibility; we have committed to put *Q&A* and potentially some other products under Deskmate. We think that Tandy is a real strong retailer and will do very well. And they're offering a much more sophisticated and uniform interface.

They're really serving the needs of the lower performance machines. Remember, the OS/2, Presentation Manager, Macintosh—all these require very powerful machines. But there are millions and millions of PCs out there, and Deskmate's really targeted at that. I think Tandy's made a very smart choice.

"The graphical user interface is extremely important, not because it's necessarily per se easier to use, but because it provides a standard, a consistency. And what is important, if you want to go from one application to the other, is the consistency..."

Not everybody needs a workstation.

Right, and not everyone can afford one. But there is tremendous value in consistent user interfaces. With the Macintosh, there's a consistency. Once you've learned it, it applies to other applications. You give me a Mac applicaton, and I can get a long way into that applicaton without using the manual. And the ability to have a graphical interface versus a character-based one has clear benefits. I was very skeptical about the mouse-driven interface; I now find it to be indispensable. When I'm using my PC, I'm always reaching for the mouse.

It is a very natural interface. So I think that Deskmate is a very intelligent move on Tandy's part. I particularly applaud their vision in making it available to allow people to put it on other than Tandy machines. Tandy's approach is to let any of the software vendors sell their products that run on anyone's hardware and include the Deskmate software in their application.

What sort of applications do you see arising out of the new importance of workgroups?

I think the one that people can relate to the easiest is electronic mail, where in a small office or even a medium or large office, you've got a

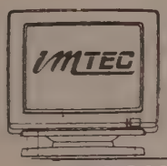
Technoland Computer

2960 Gordon Ave., Santa Clara, CA 95051

(408) 732-2244

OPEN 7 DAYS
MON.-FRI. 10-8 PM
SAT.-SUN. 10-5 PM
PRICES SUBJECT TO CHANGE WITHOUT NOTICE
*RAM SURCHARGE MAY BE IMPOSED Exp. 8/6/88

SUMMERTIME SPECIALS



SYNC MASTER COLOR MONITOR
- PGA, EGA, CGA, VGA
- 64 Colors
- 14-inch Screen
- 800x560

$435

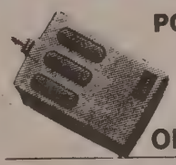
EPSON PRINTERS ON SALE

EPSON FX 286e $389

EPSON LQ500 $359

THE BEST 20 MHz 80386
- Everex EGA Card Deluxe 640/480
- 1MB on Board Exp. to 2MB
- Parallel & Serial Ports
- WA2 FDD/HDD Controller
- Teac 1.2MB Floppy Drive
- 101 Enhanced Keyboard

$2299



PC MOUSE SYSTEMS OPTICAL MOUSE

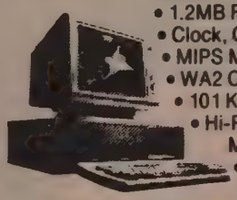
$89 Serial
$99 Bus
OMNIMOUSE... $69

HP Laser Jet II $1649 CASH

Internal Modem 1200/2400 $59/119

NEC P6 Printer.....$439
NEC P7 Printer $599

ARC American Research Corporation TURBO 12
- 80286 12/6 MHz
- 1MB
- 1.2MB Floppy
- Clock, Calendar
- MIPS Meter
- WA2 Controller
- 101 Keyboard
- Hi-Res Mono Card & Mono Monitor
- 2 serial, 1 parallel
- FREE 3.3 DOS

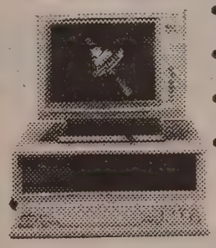


$1444

Quality 19" Monitor for Desk Top Publishing
- Resolution 1280 x 960
- Card & Monitor include with software
- Drivers for Windows, GM, AutoCad

$1799

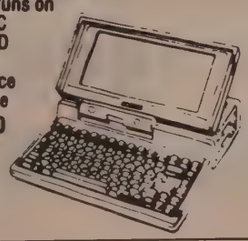
THE BEST PRICED 16MHz 80386
- Everex EGA Card Deluxe 640/480
- 1MB on Board Exp. to 2MB
- Parallel & Serial Ports
- WA2 FDD/HDD Controller
- Teac 1.2MB Floppy Drive
- 101 Enhanced Keyboard



$2199

TOSHIBA T1000
- IBM® PC compatibility in less than a 10 lb. package
- All the power of a desktop PC
- Fully portable, runs on batteries and AC
- Sharp, clear LCD display
- Outstanding price and performance

TOSHIBA T1200 $2495



$769

COMPLETE 10MHz 8088
- 10 MHz 256K on Board
- 360 Floppy Drive
- AT Style Keyboard
- Hi-Res Mono Monitor
- Mono Graphic Printer Card
- 1 Yr. Warranty

$459

COMPLETE 10MHz 286 SYSTEM
- 10MHz
- 512K Exp. to 1MB RAM
- 1.2MB Floppy
- AT Style Keyboard
- HDD/FDD Controller
- HI-RES Monitor w/Graphic Card
- 1 Yr. Warranty Parts/Labor

$888

Dealers Welcome **QUANTITY DISCOUNT** *Dealers Welcome*

Technoland

KEY TO YOUR SUCCESS

Top Quality Systems at Affordable Prices

• 24 Hr. Burn-In • All 286 systems Pass AT Diagnostics/Performance Tests • 1 Year Parts & Labor Warranty •

10 MHz XT
- 10/4.77 MHz Turbo Motherboard
- 256K Expandable to 640K
- 360K Floppy Drive
- Mono Graphic Card with Printer Port
- 12" Hi-Res Mono Monitor
- Keyboard

Low As $405

Qty	Cash Price
3+	$419
6+	$405

10 MHz 286
- 10/8 MHz Turbo Mainboard
- 512K Expandable to 1 MB
- 360K Floppy Drive
- Mono Graphic Card with Printer Port
- HDD/FDD Controller
- 12" Hi-Res Mono Monitor
- Keyboard

Low As $839

Qty	Cash Price
3+	$859
6+	$839

16 MHz 386
- 16 MHz Turbo, 0 Wait
- 1 MB Expandable To 2 MB
- Serial/Parallel Ports
- FDD/HDD Controller
- Teac 1.2 Floppy Drive
- 101 Enhanced Keyboard
- Monitor & Graphic Card Optional

Low As $1899

Qty	Cash Price
3+	$1999
6+	$1899

A B C COMPUTER

SPECIAL ON HP LASERS!

LaserJet II w/toner

$1640

286 System 8/12 MHz

Zero Wait State

640K, 100ns RAM
Expandable to 1MB (640x384)
Keytronics keyboard
Monographics Card, Hercules Compatible & Flicker Free
UL Listed Power Supply & HD Controller
1.2MB Teac Floppy R/W & Formal 360K
1 Year Parts, 2 Years Labor

$1100

MICRONIX 386 System

20 MHz
Intel 80386
Exact Compaq Clone

4-Speed Software Compatible for Full Compatible 6,8,20 MHz
Equivalent to 25.5 MHz, 1 Wait State
One 32-Bit, Two 8-Bit & Five 16-Bit Slots
16-Bit Controller for 2HD & 2 Floppy
1.2MB Floppy Drive Teac; Reads, Writes, & Formats 360K and High Density
1 MB of Memory on 32-Bit Expansion Card Expandable to 10 MB, All True 32-Bit
Clock, Calendar, & Hardware Reset
Enhanced Style Keyboard, Keytronic
1 Year Parts, 2 Years Labor

$2050

8088 Turbo System

4.77-10 MHz

512K on 640K Board
(1) 360K Drive
101 Enhanced Keyboard
Color/Mono Board
Flat Screen Amber Monitor
1 Year Parts, 2 Years Labor

$555

HEWLETT PACKARD

Deskjet-New 250 CPS ..$669

1 MB Mem Exp HP/Compatible. 329
2 MB Mem Exp HP/Compatible. . . . . .Call

EPSON

Epson FX 286E. $415

Epson LQ850/
LQ1050/LQ2500. . . . . .Best Price
Epson 86E. . . . . .Best Price

We Carry All Epson Printers

NEC

Multispeed EL/HD. $1395/2250
Multisync II/Plus. 559/875
Multisync XL 20" 1995
LC 860+/LC 890 . . . . . .1899/3195
P760/P2200 . . . . . .599/333

TOSHIBA

Laptop T1000/1200. . . . . .$720/2350
Laptop T3100/20 MB 2950

Wholesale Prices Available for Dealers

ABC COMPUTER

843 Howard Street
San Francisco, CA 94103

(415) 546-5251
Fax (415) 546-3945

Hours: **M-F:** 8:30am-7:00pm
Sat: 10:30am-4:00pm

Prices subject to change without notice.

A B C COMPUTER

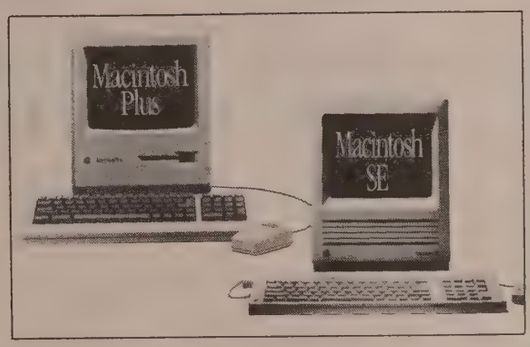
COMPAQ SPECIAL

Compaq 286

$1625

MACINTOSH™

Mac SE 2 Dr.	$2050
Mac SE 20 MB	2559
Mac Plus	Call
Mac II Mono System	3450
Laserwriters SC/NTX	Call
All Models	Best Price
Apple IIGS	Call



COMPAQ

DESKPRO MODELS:

386/20 MHz 60 MB HD	$5195
386/20 MHz 130 MB HD.	6495
386/20 MHz 300 MB HD.	8375
386 40 MB 16 MHz Factory	3895
386 40 MB 16 MHz Upgraded	3645
386 130 MB 16 MHz Factory	5495
286 Model 1 12 MHz	1645
286 640K, 20 MB/40 MB HD	1995/2245
286 Model 40 Factory.	2750

PORTABLES:

New Portable 386/40 MB	$5395
New Portable 386/100 MB	6799
II Model 4 (Factory/Upgrade)	2595/2395
II Model 2, 2 Dr., 256K (80286)	1895
III Model 20 MB	3375
III Model 40 MB	3875

IBM

PS II Model 25 Mono/Color	$969/1195
PS II M.25 M/C + 20 MB HD	1350/1595
PS II Model 30 2 Dr. + 20 MB	1595
PS II Model 30-002/021	1195/1645
PS II Model 50-021	2445
PS II Model 60, 44 MB/70 MB	3195/3595
PS II Model 80-115 20 MHz	7695
PS II M.80, 44 MB/70 MB	3995/4695
Pro Printer II/XL	359/909
Pro Printer X24/XL24	519/679
Quiet Writer II/III	865/1095

Wholesale Prices Available For Dealers

ABC COMPUTER

843 Howard Street
San Francisco, CA 94103

(415) 546-5251

Fax (415) 546-3945

Prices subject to change without notice.

Hours: **M-F:** 8:30am-7:00pm
Sat: 10:30am-4:00pm

IBM is a registered trademark of International Business Machines, Inc.
Macintosh and the Apple logo are registered trademarks of Apple Computer.

VISIONS OF THE '90S...A VIEW FROM THE TOP

SAVE 25%
REGISTER BEFORE JULY 29TH

MAX TOY Commodore
JOHN ROACH Tandy
SAM TRAMIEL Atari
MICHAEL DELL Dell Computer
SCOTT McNEALY Sun Microsystems
JOHN MORGRIDGE GRiD
WILLIAM C. LOWE IBM
JOHN P. FRANK Zenith
ALAN P. HALD MicroAge
KEN WATERS ComputerLand
JIM TREYBIG Tandem
TED PAPES Prodigy

Explore the future of the Personal Computer industry with those who are creating it.

Dataquest Personal Computer Industry Conference

September 21-23
Silverado Country Club
Napa, California

Dataquest
a company of
The Dun & Bradstreet Corporation

CALL NOW
(800) 624-3282

receptionist, you're taking messages, you're passing paper around. It can be done electronically. We do this at Symantec. Every phone message, the receptionist sits there at a computer, types an electronic mail message, sends it out. I can get the messages at 11:00 at night, or 3 in the morning, or I can get them from New York."

Electronic mail will become much more sophisticated in the next two or three years. We'll have sort of add-ons to mail systems that can sort mail, analyze it, prioritize it, do some simplistic reading of it, looking for key words, understanding that messages from this group of people are top priority, etc. It's a very important technology. Electronic mail needs to be not just in a group, but it has to allow the group to contact the world, bridging to other networks of the company in other locations, or to wide area networks like MCI Mail. This is the kind of electronic mail environment we're going to have in the next 24 months.

Another area which is groupware, for serving collective needs, is in the presentation area. At first people think, well, presentation, that's sort of a personal thing. You do a presentation, you do overheads. Most people use a Macintosh for these things; they use a product like [Living Videotext's] *More* to do a presentation.

But really, if you think about it, in any organization there are different parts of the organization that really care intensely about different parts of the presentation. The person giving it really needs to have a tool that focuses completely on the content. But for the graphic artist's department, or the corporate communications department, they want a tool that can make the presentations meet the corporate standards of the business' standard form. So you need a tool that can both allow the creative department to set up a format for slides and overheads and transparencies, at the same time that a manager might be able to put the data in. So this is another product that you really have to be able to take the design of the presentation separate from the content of the presentation, and be able to integrate them together.

Another aspect of presentations is interactive presentations to a group of people, where you're sitting there with a wide screen. Apple has large monitors in some of their conference rooms. You need to be able to sit there and not only go through the presentation sequentially on the monitor, but flip randomly through it. This is going to be a very large technology in the next five years—all presentation products having the ability to do interactive presentation. And when you're putting them on the wide screen, the speaker needs to have a local screen with all the data—how long they've talked, what the average per slide, notes for the slides that only the speaker sees—all these things are part of the group aspects of the next generation of products.

Another groupware is in the need to consolidate, where people are using personal computers and they need to pass information in a network, which then maybe goes up into a mainframe. One area of this is in project management. Symantec has a product, *Time Line*, which is very successful, the leading project manager on micros; but we did an arrangment with the leading mainframe project manager, *Artemis* from Metier, so we could pass data back and forth. So that's a group application.

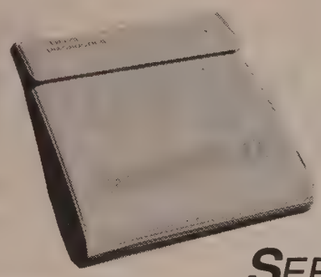
One that's probably closer to home is spreadsheet consolidation. Spreadsheets are incredibly good personal tools, but the real next step in spreadsheets would be companies like Lotus developing the ability to consolidate spreadsheets. At Symantec we all use spreadsheets, of course, to do our budgets, but then they're all handed in to the CFO—now how does he consolidate them? and when we make a change, how do we quickly get the new bottom line? This is a very important group aspect of computing, instead of just a personal aspect. Scheduling is another one—I want to schedule conference room; when can I get together with my staff? When's the next time everyone's in town—that kind of scheduling.

The bottom line on this is that the opportunity for applications is just immense in the next five years. And for individuals to develop applications, I think the opportunity on the Macintosh and OS/2's presentation manager are incredibly exciting, as big as it was ten years ago, almost. And now there are existing companies like Symantec and many others, who are eager to take products from individuals and publish them. So now is the time when people who are really interested in developing products, have a lot of skills, but they think, well, it's just impossible now to start a company. Well, it may be impossible to start a full-range company that does all aspects of the job, but to publish a product at another company, like Ashton-Tate, like Symantec, like Software Publishing or Microsoft—have one of those companies publish your product, is a very good opportunity today. And all the major companies publish products that are done by outside developers, different companies to a different extent.

Is there any particular kind of application you're looking for?

We're looking for applications that are in general business oriented, in general have wider appeal, not very vertical, and we're looking for applications that we believe can be dominant in a category. We don't necessarily only look at applications that can sell 20,000 units a month—we're interested in products that in their category, in their niche, can be very dominant. We're interested in Macintosh products, and also in products under Windows and Presentation Manager.(Symantec, 408/253-9600)□

Want to save Time, Money, & Headaches?



GET SUPERSOFT's SERVICE DIAGNOSTICS

All the software, alignment diskettes, parallel/serial wrap-around plugs, ROM POSTs and extensive, professional documentation to provide the most comprehensive testing available for IBM PCs, XTs,ATs and *all compatibles* under DOS or Stand Alone. No other diagnostics offers such in-depth testing on as many different types of equipment by isolating problems to the board and chip level.

NEW: SuperSoft's **ROM POST** performs the most advanced **Power-on-Self-Test** available for system boards that are compatible with the IBM ROM BIOS. It works even in circumstances when the Service Diagnostics diskette cannot be loaded.

NEW: 386 diagnostics for hybrids and **PS/2s!**

For over nine years, major manufacturers have been relying on SuperSoft's diagnostics software to help them and their customers repair microcomputers. End users have been relying on SuperSoft's Diagnostics II for the most thorough hardware error isolation available. Now versions of Service Diagnostics are available to save everyone (including every serious repair technician) time, money, and headaches in fixing their computers, even non-IBM equipment.

All CPUs & Numeric Co-processors
System Expansion & Extended Memory
Parallel & Serial Ports
Mono, CGA, Hercules & EGA Adapters
All Keyboards & the 8042 Controller
All Color Graphics & Monochrome Monitors
Floppy, Fixed & Non-standard Disk Drives
Standard & Non-standard Printers
System Board: DMA, Timers, Interrupt, Real-time Clock & CMOS config. RAM

Join the ranks of XEROX, NCR, CDC, SONY, PRIME, ... who have bundled SuperSoft's diagnostics with their microcomputers at no risk because of our 30 day money back guarantee.

Service Diagnostics for PC, PC/XT, and compatibles only	$169
Alignment Diskette for PC, PC/XT and compatibles (48 tpi drives)	$ 50
Wrap-around Plug for PC, PC/XT and compatibles (parallel and serial)	$ 30
Service Diagnostics for AT and compatibles only	$169
Alignment Diskette for AT and compatibles (96 tpi drives)	$ 50
Wrap-around Plug for AT (serial)	$ 15
ROM POST for PC, PC/XT, and compatibles only	$245
ROM POST for AT and compatibles only	$245
Service Diagnostics: The KIT (includes all of the above—save $502)	**$495**
Service Diagnostics for all other CPUs (386, V20, V30, Harris, etc.)	$195
Diagnostics II is the solution to the service problems of users of all CP/M-80, CP/M-86 and MS-DOS computers	$125
ROM POST for PS/2 and compatibles only	$245
Alignment Diskette for PS/2 and compatibles (3.5 inch)	$ 50

To order, call 800-678-3600 or 217-359-2112, FAX 217-398-5923, or write Supersoft

your microcomputer repair solution

SuperSoft

FIRST IN SOFTWARE TECHNOLOGY P.O.Box 1628 Champaign, IL 61820 (217) 359-2112 Telex 270365

SUPERSOFT is a registered trademark of SuperSoft, Inc.; CDC of Control Data Corp.; IBM PC, AT & XT of International Business Machines Corp.; MS-DOS of MicroSoft Corp.; NEC of NEC Information Systems, Inc., PRIME of PRIME INC.; Sony of Sony Corp

Installing A New Hard Disk

By Wayne A. Yacco

Not long ago, both my 20-megabyte hard disk drives were showing signs of wear and dragging along at near-full capacity. I found myself learning firsthand the joys of installing a new, higher capacity drive in my PC, and discovered that, while a certain amount of care is involved, it's a simple enough operation that most users should be able to do it.

First: Which Drive's For You?

The PC owner now has a wide variety of options, both in speed and in capacity. Depending on your particular situation, you may be able to save a good deal of money if you can live with some tradeoffs.

For use as a file server on a heavily loaded system, it may be necessary to pay whatever it costs to extract every last bit of performance. Without the fastest drive, a system may not work within its specifications. If sufficiently large quantities of data cannot be processed within allotted time, the system may not work at all.

For a single-user workstation, however, there is some question as to the value of speed beyond 40 milliseconds. In my experience, my old 20-megabyte CMI disk has a similar access speed and never kept me waiting to an appreciable degree. The difference in speed between 40 and 30 ms is much less than that between a hard disk and a RAMdisk.

Preparing Your Files For Transfer To The New Drive

With a new drive and the *Speed Stor* package, along with a stack of blank diskettes, I began the task of backing up all the data on my old disk. You should make at least two backups; at least one copy must serve to transfer files to the new drive.

Installing The New Drive

The basic procedure is simple enough, requiring one or two screwdrivers and nut drivers. Several lengths of wire with alligator clips are also necessary to serve as grounding cables.

Speed Stor provides utilities for partitioning and formatting your disk once you've got it installed.

While not exactly simple for the user who has never looked inside a PC, the actual removal and replacement aren't very difficult, either. Just about every required instruction is usually covered in the drive's installation manual and again in the *Speed Stor* manual.

Before you move it, it is important to park the heads of a hard disk. You can do this using the "Prepare System for Moving" diagnostics program from IBM, or you can use the "Park Head" function in programs such as *Speed Stor*. If you forget to do this, any slight jar could easily ruin data on the old drive once it is out of the machine. Parking will also make the drive less susceptible to physical damage.

Static, The Unfelt Killer

Static electricity is a real concern any time components are handled because of the susceptibility of integrated circuits to damage from static charges. Static charges are built up any time dissimilar materials break contact — essentially any time something moves. Only a few hundred volts are required to damage integrated circuits; by comparison, it may take thousands of volts before you can feel a shock.

Failing to use proper grounding procedures can result in shocking important integrated circuits. Shock can cause the drive or controller to malfunction immediately, or it may merely weaken some chips so that a malfunction will occur after all your irreplaceable data is on the drive. Don't take chances.

Before opening the system unit, or the drive's packaging, everything should be grounded to a common ground. The best ground is a copper-clad rod buried six or more feet into the earth. Water pipes are usually an adequate and more practical source of ground. Be careful not to use an improperly grounded electrical circuit.

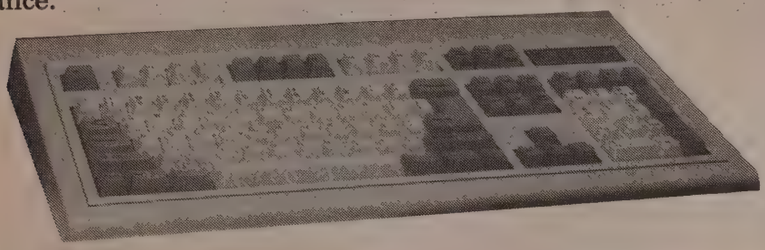
All work, including opening the new drive's packing, should be performed on a grounded surface. An easy solution to this is to cover a piece of cardboard with aluminum foil and then ground the foil, or you can just work on a piece of grounded foil. It is also good practice to ground yourself with a metal watch band or bracelet connected to a ground. Avoid wearing loose clothing, standing on carpeting, or working in low humidity if possible; these factors can all contribute to a buildup of static.

Removing The Old Drive

Once everything in sight is connected to a water pipe, the next stop is to open the system enclosure. There are many different case designs on the market now, but they are all simple to open, requiring the removal of, at most, a few screws. If you find this difficult, proceed no further on your own. Get help. Follow this dictum at any point which gives you trouble. It isn't worth the risk of damaging your drive when many technicians will charge less

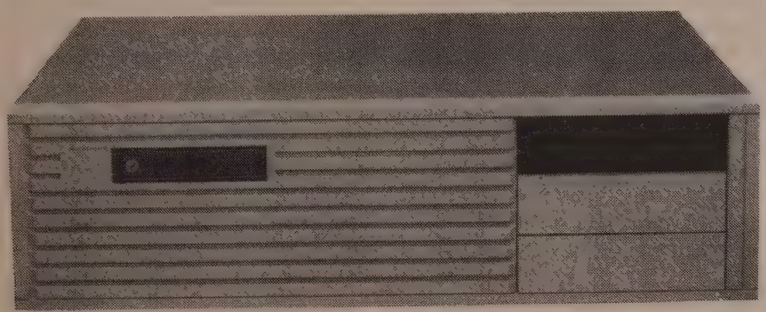
BTC. Your Number One Source For Quality Computer Components

BTC is one of the world's leading manufacturers of computer keyboards. We earned our reputation by delivering exceptional quality and impressive price/performance.

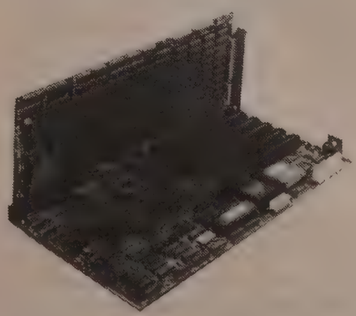


BTC offers exceptional value in their 84-Key Keyboards and their Enhanced Keyboards for the IBM PC, XT/AT and Compatibles. They are rugged and feature packed. And, the sleek, sculptured profile of BTC keyboards gives you just the right touch that includes:12 function keys, separate numeric pad, separate cursor keys and enlarged ENTER key.

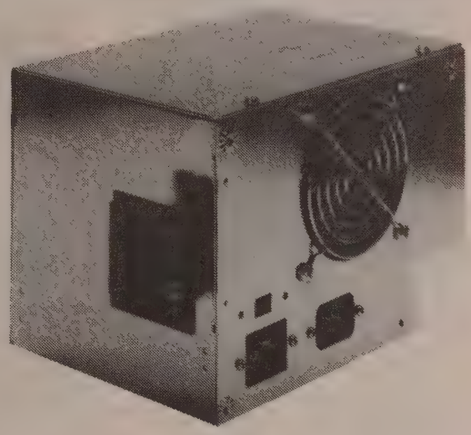
The BTC AT case shows-off its scratch resistant, baked enamel finish that's smooth, tight and laser straight. And, BTC has simplified your job of creating custom systems by preassembling many of the standard system components. There's a built-in speaker, complete with wiring. All disk drive power supply indicator lights with wiring are neatly tucked away to simplify installation and service. To make your case even more solid, we'll even install an optional BTC Power Supply.



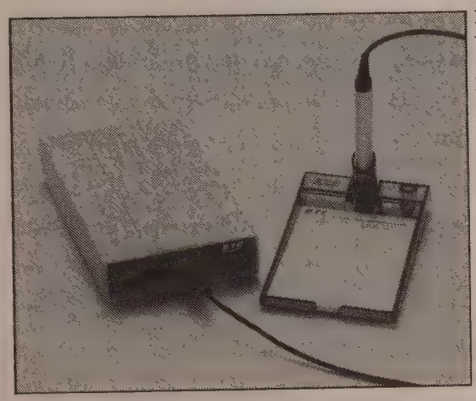
For high value in components choose MICRONICS "Baby 80386" Motherboard that installs easily in both full-sized and small AT cases. Fully COMPAQ-compatible, the "Baby 80386" features true 80386 performance, including 16 or 20 MHz, O wait state, memory bus expandable to 10 Mb of RAM, choice of BIOS and 80387 coprocessor socket. Add MICRONICS' Cache Memory board that provides 4-way associative cache, and you'll achieve a higher true "hit rate" in the cache that will boost your overall processing speed to deliver a high-performance alternative to COMPAQ 386/20.



The BTC PS-6220 Switching Power Supply is designed specifically for high-performance AT Class microcomputers. You can be sure of reliability and expandability because our power supply operates your system with 220 watts, compared to the usual 135 to 200 watts found in most systems. And you get a A/C selectable switch which allows 110 or 120 volts VAC operation. The power supply is FCC Class B Certified, too.



And BTC has introduced its new BTC-202 Bar Code Reader that includes Decoder & wand. The BTC-202 scans a variety of codes and automatically adjusts to different bar code symbols. The BTC-202 Bar Code Reader is easy to use with its bi-directional scanning and ability to read even bar codes produced by dot matrix printers. Best of all, the BTC-202 Bar Code Reader is IBM PC/XT/AT compatible and lets you work with your keyboard at the same time.



So, whether you're an OEM, dealer, or end-user looking for ways to upgrade quality while reducing total system cost, call BTC.

CALL TODAY

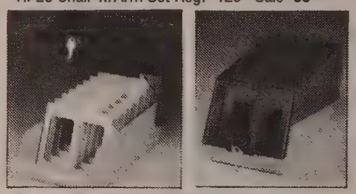
(415) 657-3956

BTC™ **Behavior Tech Computer (USA)**
46177 Warm Springs Blvd
Fremont, CA 94539
(415) 657-3956

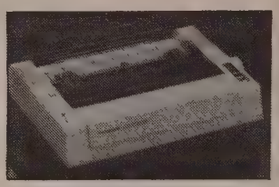
Unbelievable Prices
★★★Specials!★★★

Adjustable Chair
Hi-Lo Chair Reg. $70.00 Sale $55
Hi-Lo Chair w/Arm Set Reg. $129.00 Sale $69.95

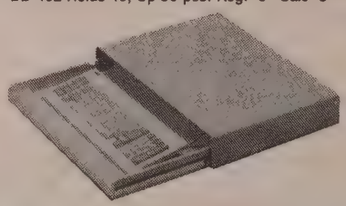
AC Power Center
Reg. $19.95 Sale $15.95



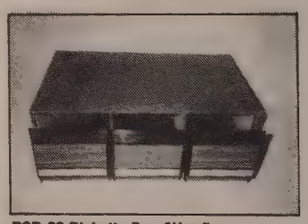
Diskette Box For 5¼", 3½"
DD-100L Holes 100, Up to 100 pcs. Reg. $9.95 Sale $5.75
DD-40L Holds 40, Up 50 pcs. Reg. $8.95 Sale $5.50



Panasonic Printer
1080i for 80 Columns
Reg. $225.00 Sale $185.00



DT-21 Keyboard Drawer
DT-21 Keyboard Drawer for AT & XT
Reg. $35.95 Sale $29.95



PCD-60 Diskette Box (Wood)
Holds 178 to 200 pcs.
Reg. $25.95 Sale $19.95

ITEM NUMBER	DESCRIPTION

SURGE PROTECTOR
EG-10 AC Power Center w/Base 19.95
EG-02 6 Outlet Power Strip (UL) 9.95

COPY HOLDER
D-2CH Copy Holder w/Root (Metal) 12.95
DT-31A Copy Holder (Plastic) 8.95
DT-32A Copy Holder w/Adjustable Arm Set .22.95

STAND
PS-11 Printer Stand (Pair) 5.95
PS-80 Printer Stand for 80 Columns 15.95
PS-132 Printer Stand for 132 Columns 16.95
MS-12 MS-14 Monitor Stand
For 12", 14" 11/13
AX-01 Cup Stand for AT & XT 14.95

DISKETTE FILE
DD-120L DD-50L For 5¼" w/Lock 9.95/6.95
DX-85A DX-100N For 5¼" w/Lock 7.95/8.95
DD-80L D-10A For 3½" 8.95/2.95

MONITOR FILTER
M-12 M-14 For Mono 12", 14" 15.95/17.95
C-12 C-14 For Color 12", 14" 17.95/19.95

ITEM NUMBER	DESCRIPTION

CABLES
EG-04 EG-05 6 FT, 10 Ft. Printer Cable ... 4.95/5.95
DS-04 DS-05 6 Ft. Centronics M/M M/F 9.95
DS1/2/3 6 Ft. Serial Cable M/M, M/F, F/F 7.95
DS-10 AT Modem Cable 9-25 Pin 3 Ft. M/F .. 5.95
HD-½ XT, AT HDD Cable 4.95/7.95
FD-1A/A Monitor Exten. Cable M/M, M/F 7.95
FD-2 Keyboard Exten. Cable M/F 7.95
Mini AB Box for Two Computers,
One Printer 25.95

GENDER CHANGER
DS-08 25 Pin M/M, F/F 5.95
DS-07 36 Pin M/M, F/F, M/F 9.95
DS-8A Null Modem M/M, F/F, M/F 5.95

DATA SWITCH BOX
#252, #254 Serial Box 18.95/24.95
#362, #364 Parallel Box 22.95/26.95

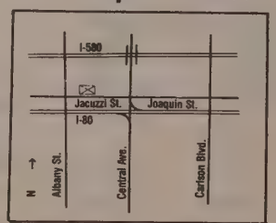
OTHER
Joy Stick for 600I & 600A (IBM & Apple) ... 19.95
DD-02 Diskette Notcher (Metal) 4.95
EG-12 Mouse Pad (Blue & Red) 5.95
FD-03/05 Head Cleaning Kit
For 3½" & 5¼" 4.95/3.95
AT Style XT Case w/150W Power Supply ... 65.95
AT Case 52.95
ED-101 Adjustable Back Chair 35.95
Power Supply 150W/200W/230W .37.95/55.95/64.95

TERMS AND CONDITIONS
A). Prices Subject To Change Without Notice.
B). Not Responsible For Type Error.
C). Subject To Stock On Hand.
D). Price Vary At Store.
E). All Prices Are F.O.B. Richmond
F). Term: C.O.D. Cash/Cashier Check.
G). Restocking Charge: Fifteen Percent Of Invoice Amount Within 30 Days.

Dealer Inquiries Welcome

EVERGREEN COMPANY
5327 Jacuzzi St. Bldg. 4 #T
Richmond, CA 94804
(415) 526-8667
Hours: Mon-Fri
10:00AM-6:00PM
Sat. 10:00AM-5:00PM

Note Our New, Improved Map!



than $100 to install it.

Most disk manuals include instructions for the mechanical installation of the drive. Pay careful attention to the flat cables during disassembly and you'll save yourself trouble later.

To remove the old drive from an AT's enclosure unscrew the fasteners that attach its retaining clips from the front of the system's frame. On a PC or XT, remove the screws along the sides of the drive bay.

After the screws have been removed, slide the drive forward slightly to expose the conections at the rear of the drive. Unplug the power connector and two flat-ribbon cables from their connectors. Note their orientation as it may be helpful to know later.

There should also be a grounding wire which can be released by either loosening the screw under which it is fastened or unplugging it from its spade connector, if one is used.

Making The New Connections

Some vendors shop drives with rails attached, others don't. If rails for an AT drive are absent, remove the rails from the sides of the old unit by removing the two screws on each, and attach the rails to the new drive. The drive's jumpers should be configured according to the manual; the resistor pack should be removed if this is the second hard drive on the system. Then, slide the new drive in place and attach the cables that were removed.

Be careful to orient the flat cables properly. Installation manuals usually assume that cables will be properly configured, but sometimes they're not. The flat-cable connectors should have a small locating key which protects them from improper insertion. Some connectors use a molded marking, like a dot, instead. Sometimes the connector has the pin numbers molded into it.

Often the key is missing, and another method must be used to determine the correct connection. The flat cables are striped with one or more colored stripes, at least one of which is on the edge of the cable. If both edges are striped, then one of the stripes should be a different color from the others. The odd-colored stripe, or the longe edge stripe, will indicate the side of the connector which matches pin one.

Be sure to check carefully that the cables have been assembled correctly. If there is some doubt, use the pins on the controller to determine which side of the cable should be connected to pin one on the drive. The number-one pin will be identified by a silkscreened numeral or an adjacent solder pad. The number-one pin on the drive's edge connector should be identified by a slot cut into the circuit board or a silkscreened numeral.

While not exactly simple for the user who has never looked inside a PC, the actual removal and replacement of a hard drive aren't very difficult, either.

Complete the process of reattaching the drive to the frame of the system unit using screws and clips that were previously removed. Reassemble the case after confirming that all cables are firmly and completely seated.

Preparing The Drive To Accept Files

Now the drive must be formatted several times with different formats. The first of these is an unconditional format, using one of several methods, depending on your hardware and available software. For the PC and PC/XT, the controller manual must be consulted. The PC/AT requires a copy of the *IBM Advanced Diagnostics*, the *Speed Stor* software or an equivalent.

Unconditional formatting, often referred to as low-level formatting, prepares the drive with sectors and other information that can be recognized by the controllers.

The drive must also be partitioned into sections for different operating systems, where appropriate. The DOS operating system includes a program called FDISK.COM which can create a DOS partition. Unless you are also running UNIX, CP/M, or another operating system, the entire disk can be assigned to the DOS partition.

The final formatting step requires the DOS partition to be formatted conditionally, a procedure also known as a high-level format. This format is created using the more familiar FORMAT.COM. High-level formatting initializes the File Allocation Table, Directory, and other DOS-required data. When formatting is finished, a DOS partition is available for restoration of the files which were backed up at the start of the replacement process.

SHARP. FIRST IN HOME OFFICE WITH PRODUCTS AND PROGRAMS.

Nearly 25 million Americans work in their homes part or full time. And that figure is escalating fast.

It's no surprise that Sharp offers the most complete line of home/office products available in this booming market. And every product is virtually maintenance free, cost-effective and easy to use.

Sharp also designs these products with a handsome, family look to encourage multiple sales with better margins for you.

And unlike other companies, Sharp is organized to let you order from a single source.

The Sharp Home/Office System is now comprised of fax machines, copiers, desktop calculators, typewriters, and computers, with special models for your distribution. And with more products on the way.

Sharp's Home/Office System is supported by all-out national advertising as well as a complete array of sales promotion and merchandising packages.

The opportunity to claim your stake in the enormous and fast growing Sharp Home/Office market is now. Call **New Age at (800) 322-2230** They'd like to tell you more.

HOME/OFFICE ELECTRONICS

Top Row: PC-4502 Lap Top Computer; UX-140 Facsimile; UX-80 Fax, Phone, Copier; Z-70 Compact Copier
Bottom Row: EL-2626 Desktop Calculator; EL-2630 Desktop Calculator; PA-3140 Electronic Memory Intellwriter™

SHARP.
FROM SHARP MINDS COME SHARP PRODUCTS™

Call for details:
(213) 518-1180
(800) 322-2230
FAX: (213) 518-2084

NEW AGE
NEW AGE ELECTRONICS, INC.

Distributed By:

NEW AGE ELECTRONICS
22310 Bonita Street • Carson, CA 90745

Also carrying Toshiba, Panasonic, Packard Bell, Magnavox, Star

& MICROTIMES
PRESENT
THE FOLLOWING

COMPUTER
SHOWS & SALES

► Saturday & Sunday 7/9 & 10
Oakland Computer Show & Sale
Special Macintosh Section!
Oakland Coliseum Exhibition Hall
Take Hwy 880 to Hegenberger exit.

► Saturday 7/16
Santa Rosa Computer Show & Sale
Luther Burbank Center
50 Mark West Springs Road
Hwy 101 to River Road exit
Right on Mark West Springs Road

► Saturday 7/23
Santa Clara Computer Show & Sale
Santa Clara Convention Center
5001 Great America Parkway
Across from Great America.

► Saturday 8/6
Marin Computer Show & Sale
Marin Civic Center Exhibit Hall
N. San Pedro Road exit off 101,
Left on Civic Center Drive

► Sunday 8/14
Sacramento Computer Show & Sale
Sacramento Scottish Rites Center
Hwy 80 to 30th St. exit.
Follow 30th to 8th St. Turn right.

► Sunday 8/21
Vallejo Computer Show & Sale
Solano County Fairgrounds
Exposition Hall
Across from Marine World

TREMENDOUS SAVINGS

NEW PRODUCTS
CLOSE OUTS
OVER STOCKED
HARDWARE
COMPATIBLES AND CLONES
SOFTWARE
BARGAIN PRICES
MAJOR BRAND NAMES
DISCOUNTERS
PERIPHERALS
WHOLESALERS
ALL UNDER ONE ROOF!
SAVE!

► ALL SHOWS 10-5 PM
Admission $5.00 Kids 12 & under FREE

EAST-WEST COMPUTER SHOWS
(formerly Golden Gate Shows)
CALL FOR INFO: (415) 388-8893

Using Speed Stor

The *Speed Stor* software formats large hard disk drives so that their entire capacity may be used for DOS, thereby overcoming DOS's 32-megabyte limit on storage capacity. A number of necessary functions are also included to test the drive's performance and surface condition, flag bad tracks, create a drive table, change the interleave factor and perform additional tasks that would otherwise require *IBM Advanced Diagnostics*.

HARDPREP is the *Speed Stor* program which performs the foregoing functions and the unconditional formatting. This routine requires that the user know certain parameters of the drive's performance, which should be available in the drive's manual. Many drives can simply be selected from the substantial list of supported manufacturers. Selecting each menu entry reveals a list of the manufacturer's models and details their parameters. There is also a standard-type entry which can be used if a drive is one of the standard AT types.

If there are bad tracks listed in the manufacturer's media-defect list, they must be locked out either during or after the formatting. After this step, the low-level format is complete.

The second step, partitioning the drive, is accomplished with the PARTED routine. PARTED allows a large drive to be divided into practically any configuration. At least one small DOS bootable partition must be created if the drive is to be used to start up the system. Other partitions can be used for DOS or other operating systems; however, *Speed Stor* can only provide formatting for DOS-type partitions.

DOS partitions can be fully compatible or they can be extended types. The DOS partition is fully compatible with any software that uses DOS-formatted files. Each partition is limited to 32 megabytes, but the physical drive can be divided into enough logical drives to use all available sectors.

The extended partition is fully compatible with programs that use the DOS file management functions. Incompatibilities with programs that perform their own file management, happily a minority, arise from the use of oversized clusters to handle very large logical drives within the limits of the DOS file-allocation table. Certain database files can not only be extended beyond 32 megabytes, they can be processed more efficiently with the larger cluster size.

After partitioning, PARTED provides the means to format the partitions. For bootable drives, the hidden operating system files must be transferred from a DOS diskette with the SYS command. The DOS FORMAT command, on the other hand, cannot be used with the partitions created by PARTED.

Speed Stor also includes a driver, HARDRIVE.SYS, which must be used to allow access to all partitions except the first. A routine called ADDEVICE is used to customize the driver's inclusion in the system's CONFIG.SYS file. Another routine, INSTALL, can be used to automate the installation process for both HARDPREP and PARTED for most installation requirements.

Failing to use proper grounding procedures can result in shocking important integrated circuits. Shock can cause the drive or controller to malfunction immediately, or it may merely weaken some chips so that a malfunction will occur after all your irreplaceable data are on the drive.

One Feature Too Many

A feature included with *Speed Stor* which nobody likes is copy protection. It is said that unscrupulous system integrators use the program to format drive after drive in violation of stipulations in the license agreement. Not an unreasonable fear, but unethical and technically sophisticated users are unlikely to be thwarted by key-disk protection schemes.

Since the product needs to be used so seldom, it isn't too much of an inconvenience to insert the key disk during use. The real loser is the end user who needs to back up the diskette. There is no way I want to assume the risk that my time will be wasted waiting for a replacement disk to be sent. Fortunately, the Option Board from Central Point Software can easily reproduce this disk for your archives. (*Speed Stor*, Storage Dimensions, 2145 Hamilton Ave., San Jose, CA 95125, 408/878-0300.) □

Copyright © 1988 by Wayne A. Yacco. All rights reserved.

Convex Resources, Inc.

Presents The

New King of Power Computing

EVEREX COMPUTER SYSTEMS DIVISION **Step 386/20** EVEREX COMPUTER SYSTEMS DIVISION

and

SEVEN MAJOR REASONS

Why This is *THE* PC/AT Compatible Machine for You

1. Free

First year onsite maintenance MS-DOS 3.3 & GW BASIC

2. Performance

	Step 386/20	Compaq 386/20
Norton 4.0	24.3	24.2
Landmark	35.0	34.5
MIPS	2.90	2.89
PM MIPS	4.90	4.59

3. Co-Processor

80387-20 & Weitek 1167 support

4. Supported Operating Systems

DOS, OS/2, Xenix/386, Unix, Pick

5. Storage

High performance 1:1 interleave floppy/hard disk controller

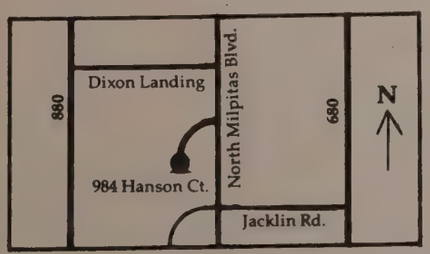
6. Main Memory

Up to 8 MB of high speed DRAM on motherboard, 8 MB more on 32-bit expansion board

7. Memory Cache

64K to 256K of 25ns writeback static RAM cache for full zero wait state operation

We Want You To Come In and Test Drive This High Performance Machine!



We custom configure for your needs.
We carry a full line of Everex products, including the new Step 286/16.

Convex Resources, Inc.
984 Hanson Court
Milpitas, CA 95035

CALL US
Monday-Friday
9:00-5:00
800-647-8889
Fax
408-263-1263

Evaluating C Compilers For The PC

Borland, Microsoft And Beyond

By Charles Seiter

Today's C programmer enjoys a far wider and less expensive selection of tools than were available as recently as two years ago. Both Microsoft's *QuickC* and Borland's *Turbo C* are better compilers than anything that was available at that time for $600. These souped-up packages are priced like entry-level software, but feature nearly everything a professional developer could demand.

That means complexity, and raises a question: do you need *QuickC*, *Turbo C*, or none of the above?

The Ninety-Nine Dollar Ferrari

A few years ago, Borland dominated the Pascal compiler market with *Turbo Pascal*, a low-cost compiler popular with students, programming hobbyists, and a modest assortment of developers. Microsoft, in contrast, dominated the high-end C compiler market with *Microsoft C* versions 3.0 and 4.0, at $500 per copy.

Then Borland challenged Microsoft with a $99 program, *Turbo C* v.1.0, which could match or beat *MS C* 4.0 on most code-size and execution-speed benchmarks, and set a new standard in compilation speed as well. Microsoft was bound to take up this challenge (*Turbo C* sold several hundred thousand copies in its first few months), and responded with a two-pronged counterattack. First, it upgraded its professional compiler (*Microsoft C* 5.0) to include new techniques to beat *Turbo C* on a variety of code benchmarks. Second, it designed *QuickC* to be a standalone product, and also the "programming environment" for 5.0. *QuickC* as a standalone sells for the same low price as Turbo, so these two now must compete head-to-head for the hearts and minds of aspiring C programmers.

Notes For Novices

This competition has resulted in feature-packed systems that let you set up shop as a commercial programmer (Microsoft wrote *Excel* for the PC in *C* 5.0, and Borland wrote *Quattro* with *Turbo C* 1.5) but may leave Saturday afternoon hackers scratching their heads over elaborate sets of manuals. Here's a brief explanation for rusty BASIC programmers.

C is a highly modular language with a small core. Functions and I/O routines are not "built in" the way they are in BASIC. If you try to run a modest sample program that asks a user for inputs A and B and then output SIN(A) and COS(B), you will find that: 1) you need directives to include I/O and MATH "header" files at the beginning of the program,

While C may be one of the worst languages available for one-page "let's learn programming" exercises, it's now the language of choice for large commercial projects.

Competition

Three other low-cost compilers have recently been upgraded, and offer performance comparable in many ways to *QuickC* and *Turbo C*, often providing special features of their own. Since they evolved in the days before cut-throat high-stakes competition in C compilers, they are especially suited to the needs of new users (and non-hard-disk systems).

Power C

Mix Software
1132 Commerce Drive
Richardson, TX 75081
(214) 783-6001

Maybe, having read through the description of the C language in its *Turbo* and *Quick* implementations, you're still not sure whether you want to plunge in or stick to BASIC. Mix Software is ready to help you with this decison by offering *Power C* at $19.95 — at this price if you never use it much at least you won't feel guilty.

Based on an upgrade of the original *Mix C* compiler, *Power C* offers competitive benchmarks (better than *Microsoft C* 4.0 in most tests), a graphics library, automatic MAKE/LINK, and a good introductory tutorial. If the competition from the giants in this area weren't so stiff, *Mix* would be guaranteed decent market share at this features/price ratio.

Let's C, v. 4.0

Mark Williams Company
1430 Wrightwood Avenue
Chicago, IL 60614
(312) 472-6659

This program is designed to work with Mark Williams' companion product *csd* (C source debugger), and is found bundled with it, at Radio Shack and elsewhere, for $75 for the package. In *Let's C*, you develop programs in a text editor (micro-EMACS) that operates in a less elaborate integrated environment than *Turbo* or *Quick* but which includes a MAKE and many UNIX-like utilities.

The real strength of this package is in *csd*, which is a more helpful and usable debugger than anyone else offers at this price. *csd* lets you evaluate expressions and execute C functions, set trace points and watch variables, and it provides generous on-line help. As opposed to *QuickC*, which provides only a few pages of remarks about its debugger (on the assumption that serious programmers will end up buying CodeView anyway), *csd* features a hundred-page manual with an explanation of debugging techniques. Together with the *Let's C* manual, which assumes less background than the *Quick* or *Turbo* documentation, this is a very friendly package for beginners, and a competitive compiler as well.

Eco-C88, v. 4.0

Ecosoft Inc.
6413 N. College Avenue
Indianapolis, IN 46220
(317) 255-6476

Eco-C was one of the first low-cost C compilers (the company made C compilers for CP/M) and has been through several stages of refinement. At $99.95, *Eco* offers built-in syntax error checking and semantic error checking at the source code level. Briefly, this means that code is checked for a great variety of possible mistakes as you type it in the editor. Since these errors (unmatched parentheses, missing semicolons, etc.) are common for beginners and annoying to find during the compile-and-link cycle, this feature is a distinct plus.

There's also a source code debugger called C-more for bugs that get past these filters. Since the manual was written by Dr. Jack Purdum (he owns the company), author of one of the best introductory C books, it's compact but quite easy to read.

— Charles Seiter

SANTA CLARA STORE OPENING SOON!

WE SELL EXCELLENCE FOR less®

IBM COMPATIBLES

Cedars 386

Mylex Motherboard
20 MHz
Available for Shipping

Cedars 286

12 MHz . . . . . **Call**
10 MHz **$1049**
Complete system:
640K, 1.2 MB drive, keyboard
WD controller, graphics card & monitor

Cedars XT Turbo

*10 MHz 640K 1 drive
mono monitor
graphics card . . . . . **Best Price**
*Same w/2 drives **$719**
*w/20 MB hard drive **$929**
For color graphics add **$195**
For EGA graphics add **$389**

We Are Authorized Dealers for:
Lotus, Ashton-Tate, AST, NEC, Intel, Hyundai, Epson, Toshiba.

PRINTERS

Epson FX-850 . . . . . **New**
Epson FX-1050 . . . . . **New**
Epson LX-800 . . . . . **$194**
Epson LQ-500 . . . . . **$339**
Epson LQ-850 . . . . . **$548**
Epson LQ-1050 . . . . . **$769**
Epson EX-800 . . . . . **$444**
Epson LQ-2500 . . . . . **$845**
NEC P-7 . . . . . **$595**
NEC P-2200 . . . . . **$339**
Brother HR-60 . . . . . **$650**
Citizen MSP 55 . . . . . **$399**
Okidata 390 . . . . . **$399**
HP Laser II **$1695**
Panasonic 1091i **$208**
Printer stand **$9**

Hayes 1200 ext. **$295**
Hayes 2400 ext. **$425**
Samsung monitor **$69**
Samsung EGA monitor **$349**
Everex EGA card **$125**
Everex 1200B modem **$78**
Seagate 20 MB kit **$269**
Seagate 30 MB kit **$299**
Seagate 40 MB (ST-251) . . . **$399**
Seagate 80 MB (28 ms) **$695**
Plus Hard Card 40 . . . . . **$669**
ATI VGA (VIP) card **$249**
Everex Enhancement cards . . **Call**
Xidex DS-DD **$8**
Switch box A-B **$39**
Ribbons . . . . . **Very Low**

SOFTWARE

Lotus 1-2-3 . . . . . **$295**
Lotus Symphony **$425**
dBASE IV . . **Available in July '88**
WordStar Rel. III . . . . . **Low**
WordPerfect 5.0 . . . . . **$234**
Framework . . . . . **Call**
Lotus Metro . . . . . **Call**

Hyundai
XT & AT
Call for Pricing
(18-month warranty)

IBM PS II . . . . . **Best Price**
Compaq Portable 386
model 100, 20 MHz,
100 MB HD,
1 MB memory **$7250**
Compaq Deskpro 286 . . . . . **Call**
AST Premium 286 . . . . . **In Stock Best Price**

Intel

8087-1 (10 MHz) **$189**
8087-2 (8 MHz) **$144**
80287-10 (10 MHz) **$279**
80387-16 . . . . . **$469**
80387-20 . . . . . **$649**
Aboveboard PC **$245**
Aboveboard AT 512K **$399**
386 Inboard PC **$749**
386 Inboard AT **$985**

TOSHIBA

World's Lightest Portable PC!
T1000

- Richly featured, yet weighs just 6.4 pounds.
- Includes 512 KB memory, expandable to 1.2 MB, built-in 720 KB 3.5" floppy drive, supertwist screen, and MS-DOS® in ROM.
- Runs on battery power and AC too.
- Easy expansion with built-in ports and broad option choices.
- Toshiba's most affordable portable ever!

$729

TOSHIBA

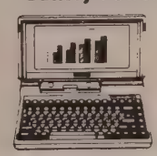
Less wait. Less weight.
T5100

- The ultimate portable 386 PC.
- Desktop power in a compact 15 lb. package that's just 12.2"W x 3.5"H x 14.2"D.
- 80386 CPU at 16 MHz; 80387 co-processor socket.
- 40 MB hard disk, 1.44 MB 3.5" diskette drive.

$4895

TOSHIBA

Hard Disk Performance in a Battery-Powered Portable.

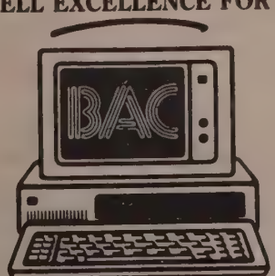


T1200

- 20 MB hard disk, 1 MB memory, 720 KB 3.5" floppy, supertwist screen and removable, rechargeable battery pack.
- All in a 10.9 pound portable that runs up to 7 hours on batteries (AC too!)
- Easy expansion with built-in ports and broad option choices.
- Everything you want in a portable PC!

$2295

WE SELL EXCELLENCE FOR less®



BAY AREA COMPUTERS

(415) 543-2190
589 Mission St.
San Francisco, CA 94105

HOURS: 9:30-7 M-F
10:30-5 SAT
UPS DELIVERY

AMEX DISCOVER VISA MasterCard

Prices may vary.

IBM is a trademark of International Business Machines. Compaq is a trademark of COMPAQ. Cedars is a trademark of International Micro Devices.
Prices subject to stock on hand. Prices reflect 5% cash discount. For terms, add 5%. Visa, Mastercard, American Express call.

2) you need to have the appropriate math library in a specific directory (LIB) recognized by the compiler and 3) your compiled source code (.OBJ) and the math routines (also .OBJ files from LIB) will have to be "linked" to produce a .EXE file that you can actually run. The C version of a simple two line BASIC program thus can become a lengthy exercise in file handling.

But this approach means that long programs can be developed in modules, and that the modules can be compiled and tested separately. Each module produces an .OBJ file, and when all the modules perform satisfactorily they can be called from a main program and linked together. Good C compilers, like *Quick* and *Turbo*, include facilities (called MAKE or Project) for tracking the status of all program parts to make sure the overall .EXE is constructed from the right, updated modules.

Thus, while C may be one of the worst languages available for one-page "let's learn programming" exercises, it's now the language of choice for large commercial projects. Let's see how these two market leaders compare.

Turbo C

Turbo C provides an "integrated development environment" for writing C programs, with an editor, compiler, and file management facilities available as pull-down menu choices in a standard screen. All the features of Turbo C can be directed from this environment, which has been programmed for an admirably crisp "feeling" even on stock PCs. For old C hands who are more comfortable with a command-line system for compiler directives, that's offered too — most users will find the integrated environment a great improvement over the old style, however.

Editing programs is done with *WordStar* commands (no additional commands appear under the Edit menu), a standard Borland practice also used in *Turbo Pascal* and *Prolog*. Although few programmers are likely to rave about *WordStar*-style editing, it's at least familiar to the vast legions of Pascal users now getting into C, and follows a convenient auto-indenting convention.

From the Editor, programs may be tested directly by choosing Run, or compiled to disk or memory with choices under the Compile menu. In either case, compilation speed is *Turbo*'s claim to fame, and it delivers fast linking as well as compilation. Watching the lines of source code speed past in the Compile status window, it's startling to remember that a few hundred lines per minute was considered brisk several years ago. Compile optimization directives include optimization for code size, for speed, for minimal register-load redundancy and looping efficiency.

The main "upgrade" from 1.0 to *Turbo* 1.5 was addition of a graphics library of 70 functions, comparable in practice to the graphics set in *QuickC*. Graphics functions are documented in a separate volume of the three-volume documentation set, and include pie-slice, 3D bars, and fill patterns besides the usual circle-, line- and box-drawing routines.

Rather than including a debugger (the Debug item in the main menu just allows management of error message files generated by the compiler and linker), Borland has announced the release of a debugger as a separate product.

The code benchmark results are easy to explain. *Turbo C* was targeted to beat *Microsoft C* 4.0 on a wide range of benchmarks, and it succeeded. That means that *Turbo* outpoints *QuickC* on most code size and execution time benchmarks, since *Quick* uses the original 4.0 compilation engine rather than the newer (and more expensive) 5.0 version.

QuickC

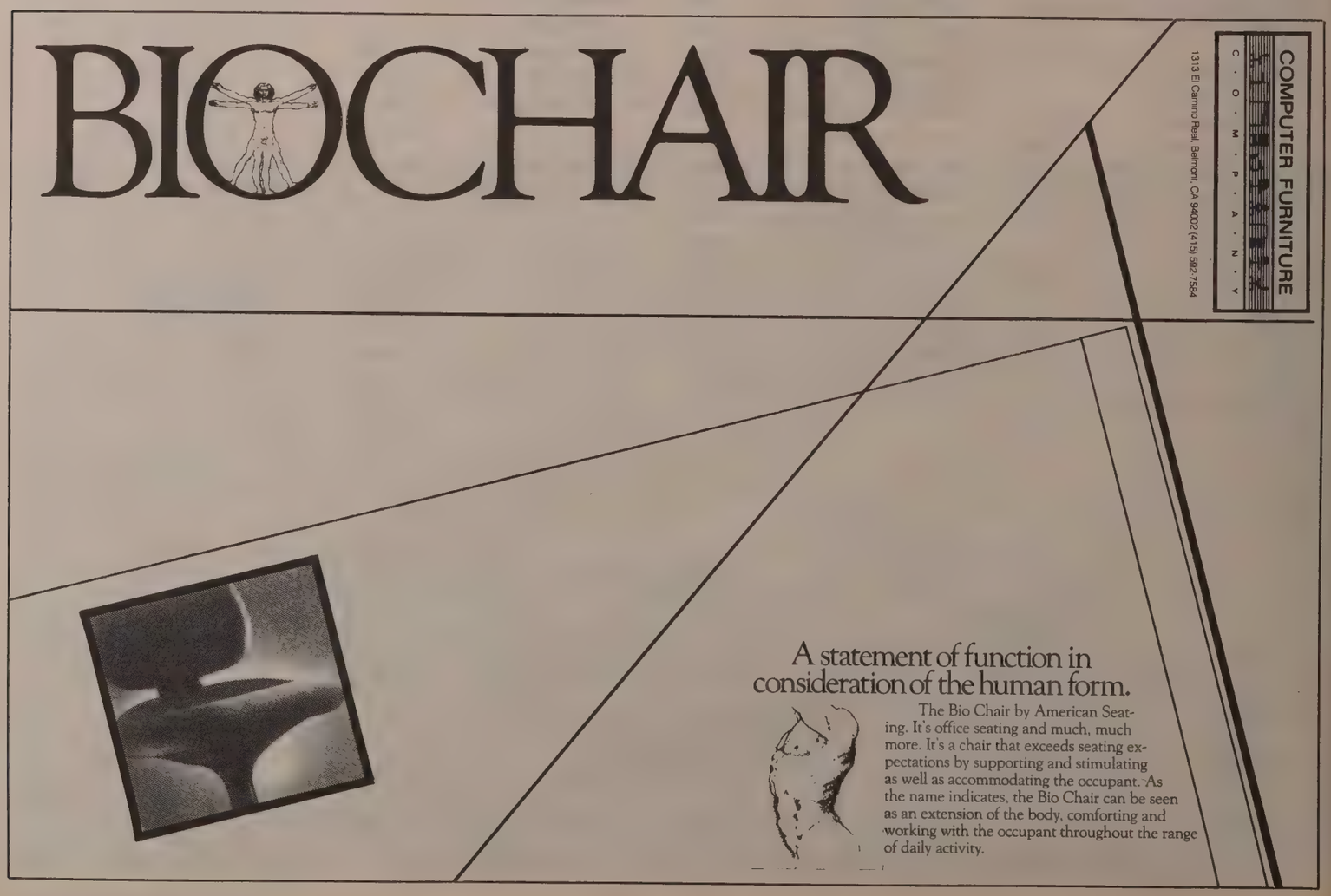
QuickC does double duty as both a $99 program and the "front end" or development environment for the 5.0 professional package. This means that it is geared to a somewhat more elaborate file structure — the SETUP batch file takes 20 minutes to install the program on an XT with a hard disk. The *QuickC* approach requires that, for convenience, you integrate a special batch file with *QuickC*'s path directives into your AUTOEXEC.BAT file.

Microsoft wrote Excel for the PC in C 5.0, and Borland wrote Quattro with Turbo C 1.5

Starting a new source code file in the integrated editor, you will note that *QuickC* supports menu-driven Cut, Copy and Paste (and Undo) commands and also menu-driven search and replace under a separate Search menu. For those not familiar with *WordStar* commands, and especially users who have a mouse for easy text marking, the *QuickC* editor is an improvement on *Turbo's*.

Search and replace functions offer a large variety of wild-card symbols for matching complex expressions,

continued on page 158


BIOCHAIR
COMPUTER FURNITURE
C · O · M · P · A · N · Y
1313 El Camino Real, Belmont, CA 94002 (415) 592-7584
A statement of function in consideration of the human form.
The Bio Chair by American Seating. It's office seating and much, much more. It's a chair that exceeds seating expectations by supporting and stimulating as well as accommodating the occupant. As the name indicates, the Bio Chair can be seen as an extension of the body, comforting and working with the occupant throughout the range of daily activity.

QSP INC. QUALITY SERVICE PRICE LEADER FOR '88

Sales (408) 435-8222 • 780 Montague Expwy • Ste. 207 • San Jose, CA 95131

QSP SUPER MICRO SYSTEMS

SYSTEM	MEMORY	BIOS	PRICE
386-20MHz–0 Wait, Full*	1 MB (256K, 80ns)	Phoenix/Award	$2505
386-16MHz–0 Wait, Full*	1 MB (256K, 100ns)	Phoenix/Award	2424
386-20MHz–0 Wait, Jr.*	1 MB (256K, 80ns)	AMI BIOS	2299
386-16MHz–0 Wait, Jr.*	1 MB (256K, 100ns)	AMI BIOS	1999
286-12MHz–0 Wait, Jr.*	512K (256K, 80ns)	AMI BIOS	1199
286-10MHz–0 Wait*	512K (256K, 100ns)	Phoenix	1099
286-8MHz–0 Wait*	512K (256K, 120ns)	Phoenix	999
8088-2 XT–10MHz*	256K (256/64K, 150ns)	ERSO	525
8088-2 XT– 8MHz*	256K (256/64K, 150ns)	ERSO	499
8088-2 XT–10MHz*	256K (256/64K, 150ns)	ERSO	389

*Prices include monochrome monitor & graphics card.

VALUE ADDED:
- 30 days money-back guarantee!
- 1 year warranty on parts & labor.
- Full technical support provided.
- Full documentation and set-up software!
- Excellent references from government and Fortune 500 companies!

SPECIAL PROMOTIONAL OFFER: Save up to hundreds on popular software packages by getting them at distributor cost on the purchase of any QSP computer. Pay only our costs with no markup and get the software of your choice at the best price!

Dbase III - **$369** Microsoft Word - **$210** Wordperfect - **$215** Ventura Publisher - **$465**
Windows - **$67.32** Framework II - **$369** Multiplan - **$121** Norton Utilities - **$47**

Choose from hundreds of other titles! Start saving by calling now!

LOCAL AREA NETWORK • THE COMPLETE PACKAGE •

The most comprehensive total solution approach to networking!

1st **CONSULTATION:** Free determination of your LAN needs
2nd **ESTIMATE:** Free written quote on total LAN cost
3rd **INSTALLATION:** Of all LAN components; Hardware & Software
4th **CUSTOMIZATION:** Of all software to fit clients needs
5th **TRAINING/SUPPORT:** On Novell/Post sale support

HARDWARE: **ARCNET**
Arclan - LAN controller **$155**
Active Hub - 8 PORT/2000ft **350**
Passive Hub - 4 port/100 ft **55**
File Servers & Workstations . . . . . **Call**

SOFTWARE: **NOVELL**
Entry Level Netware
Advance Netware 2.0A
Advance Netware SFT 2.1

DRIVES
- 360K Mitsumi floppy drive $70
- 360K Fujitsu floppy drive 75
- 360K/1.2MB TEAC floppy drive 89/115
- 20MB ST-225 half ht. 65ms 229
- 20MB ST-225 KIT 65ms 265
- 30MB ST-238 half ht. 65ms 240
- 30MB ST-238 KIT 65ms 315
- 40MB ST-251 half ht. 40ms 380
- 40MB ST-251-1 half ht. 28ms 430
- 65MB ST-277 half ht. 40ms 475
- 65MB ST-277 KIT 40 ms . . . . . Call
- 20MB ST-4026 Full ht. 40ms 450
- 30MB ST-4038 Full ht. 40ms 529
- 44MB ST-4053 Full ht. 28ms 620
- 80MB ST-4096 Ful ht. 28ms 795
- Miniscribe & Micropolis Drives . . . . . Call

MATH CO-PROCESSORS
80287-6 . . . . . $175 80387-16 . . . . . $499
80287-8 . . . . . 275 80387-20 725
80287-10 325

MODEMS
- Comstar 2400 Internal $155
- Suntek 1200 Internal 79
- Hisland 2400 External 145
- Hisland 1200 External 75
- 1200 Mini External 89

CHASSIS
- AT case — full size, holds 5 1/2ht. drives $69
- Mini AT case for XT— reset button & LEDs 59
- XT case — IBM style 29

INPUT/OUTPUT CARDS
- Mini I/O XT— 2sp, 1pp, game port, clock/calendar, 2nd sp optional $55
- Mini I/O AT— same as above w/o clock/calendar 55
- 2nd serial port upgrade XT/AT 25
- TWINCOM serial card —1sp w/2nd option 24
- MONOPAK XT— monographics w/1 sp, 1pp, game port, clock/calendar 69
- MONOPAK AT— same as above w/o clock/calendar 69

VIDEO CARDS
- Monochrome graphics card $41
- Color graphics card 41
- EGA card — Autoswitch, 640 x 480 resolution 155

CONTROLLER CARDS
- Suntek 2 dr. floppy cont. $22
- Hard disk controller card 85
- WD WA2 hard/floppy for AT 145
- RLL hard disk controller 95
- Special floppy cont. for 1.2MB drive on XT 75

MEMORY EXPANSION CARDS
- RAM card 576K w/0K $29
- MEMOPLUS XT— 2MB EMS w/0K 85
- MEMOPLUS AT— 2MB EMS w/0K 99
- DO-ALL XT—1.5MB EMS + I/O w/0K 149
- DO-ALL AT— 3MB EMS + I/O w/0K 190

PRICE LEADERS
84 Key AT style Keyboard $28
2400 Baud External Modem 145
1200 Baud External Modem 75
M2 Mechanical Mouse 40

MONITORS
- Samsung Amber 12" $75
- Casper Amber 12" 85
- Tatung Amber 12" 95
- Quadrant Amber/White 14" 110
- Samsung 1464 RGB 245
- Casper HD55 RGB 265
- Tatung 1322 RGB 295
- Samsung 1453 EGA 345
- Quadrant 1456 EGA 365
- Tatung CM-1380F EGA 415
- Tatung CM-1495 Multisync 495
- Nanao 8060H Multisync 545
- Nanao 8060S Multisync 585
- NEC JC-1402 Multisync 595
- NEC Plus 920
- NEC XL 2125

POWER SUPPLIES
- 200 watt, ASTEC UL, CSA listed (top line) $95
- 180 watt switching, for XT 49
- 165 watt switching, for XT 42

KEYBOARDS
101 Key Enhanced mechanical Alps switch $65
84 Key AT style mechanical switch 52
84 Key AT style mechanical 28

"Forth is the only SDI possibility.
The chance of convincing them of that is zero.
So pray for disarmament."

— Chuck Moore, creator of FORTH, 1986.

FORTH:

An Orphan Comes Of Age

By Jack Woehr

The first programming language for electronic digital computers was the screwdriver. You wanted the machine to add, you wired it to add. You wanted it to subtract...you get the idea.

Then von Neumann decided that if the program would be a good dog and stay off the furniture, it could come into the house with the data. Programmers sat with telegraph keys clicking in ones and zeroes to fill memory with operands and operators. This was the First Generation.

Some time thereafter, the teletype keyboard replaced the telegraph key as the console input device, and the teletypewriter replaced blinking lights as the standard output. Machine code, the practice of entering data and program as octal (later hexadecimal) digits, was born, followed closely by its more cultured sibling, assembly code. This was the Second Generation.

But coding instruction-by-instruction is laborious work; the more high-flown the concept embodied in the program, the more laborious the work. So ALGOL (1956), FORTRAN (1957) and BASIC (1964) were devised to allow programming in something resembling English and mathematical notation. This was the Third Generation.

By 1970, the Fourth Generation had arrived, and with it, a quirky yet holistic approach to the classic struggle of man with machine: FORTH.

Why Forth?

The Forth programming language was primarily the work of one individual, Charles (Chuck) Moore, who nowadays describes Forth as more of an approach than a programming language. What Moore wanted was a compact, portable, complete computational environment that would allow him to defy what he found the most depressing statistic of his profession: that a talented programmer could be expected to produce forty programs in his entire career.

Moore realized that his efficiency and that of his colleagues were limited in part by the programming languages they were using. He set out to design a language with simple syntax, efficient execution and greater modularity than was available in other languages.

Forth is an interpretive environment that executes command lines immediately, or compiles "word definitions" into the "dictionary" for later command line execution. Thus, it achieves a convenience far surpassing that of BASIC with the execution speed of a compiled language.

Furthermore, Forth is an entire operating system in and of itself, capable of being implemented on any computer architecture yet devised, including the parallel processing engines just emerging as we write.

Forth commands a fiercely loyal following of enthusiasts who find in Forth an answer to all their programming needs. Those who learn Forth as their first computer language seem to learn Forth faster than any other modern computer language can be taught.

Yet with all its simplicity, completeness and convenience, Forth is largely unknown to the general computing public, often ignored in academia, and scorned by proponents of more popular programming languages. The "death of Forth" has been widely heralded every year since 1977. Yet Forth and Forth programmers somehow struggle on.

One important key to Forth's continued survival has been the boom in embedded controller applications. Once found almost exclusively in the domain of industry, the micro-controller now finds itself in our homes, in our automobiles, in our toys, in our workplace. Programs for such "smart" appliances used to be written mostly in assembly language for reasons of speed and compact memory size, but the "threaded" nature of Forth allows a combination of the convenience of a high-level language with a compactness and speed that approaches that of assembly language. The result is that Forth is coming to dominate new projects of this type, finding a niche at Ford Motors, 3M Corporation and IBM, to name a few recent users of Forth.

Another factor in Forth's favor is that the language has matured from the days when every installation was unique, and the inside joke was: "If you've seen one Forth, you've seen ...one Forth." Forth has passed through the FIG-Forth era, the 79-STANDARD, and Forth83. This year witnesses the labors of an ANSI (American National Standards Institute) Standardization procedure for Forth. Next spring should see a proposal for an ANSI standard Forth which will no doubt be the subject of hot controversy in a community of programmers reknowned for their individuality, each of whom has his or her own vision of "true Forth."

Also, Forth programmers are beginning to improve their lines of communication. Once merely the publisher of a hobbyist-like magazine, *FORTH Dimensions*, the international Forth Interest Group now hosts a Round Table Conference on the GEnie network. Other Forth electronic Bulletin Boards are also thriving, such as the East and North Coast Forth Boards.

Still A Few Problems

Problems still exist, however. Corporations desperately seeking Forth programmers are unable to locate competent individuals. Competent individuals despair of finding employment and turn to hone their skills in other languages. Misconceptions, such as the idea that Forth is locked into 16-bit processors, abound. Worse, there is still no organized effort aimed at getting Forth its due attention in computer science curricula around the country.

Yet there remains a die-hard core of professional and amateur programmers who feel that Forth is, well...Just Right; who feel that the individual deserves to be able to access the entire power of the modern computational device from micro to mainframe in a simple, straightforward manner; who see that years of "wandering in the wilderness" has paid off in that Forth, more than any other language of today, is free of excess baggage, that it has been honed and polished to the core, that it is ready for the sequential puzzles of today and the parallel enigmas of the next generation. □

Forth is an entire operating system in and of itself, capable of being implemented on any computer architecture yet devised, including the parallel processing engines just emerging as we write.

Jack Woehr © jax@well.UUCP, JAX on GEnie) programs in Forth for VESTA Technology, Inc., 7100 W. 44th Ave., Wheat Ridge, CO 80033. Individuals interested in Forth should contact the Forth Interest Group, 1330 S. Bascom Ave., Suite D, San Jose, CA 95128 (408) 277-0668.

"$99 For 30 Days. That's All It Took To Convince Me."

Now, you can try a Kyocera Laser Printer for 30 days. For just $99. If you don't like it for any reason, we'll take it back.

Of all the people who try a Kyocera Laser Printer, 92 out of 100 decide to keep it. And once you experience the sharp, clear print quality of a Kyocera, you won't let it go either.

Your Kyocera will work with everything. From IBM® PC's and compatibles to Lotus,™ WordPerfect,™ Aldus PageMaker,™ and every other popular software package.

And Kyocera Laser Printers are easy to use. So you'll have professional looking reports, spreadsheets, graphics and newsletters in no time at all.

QUICK, VERSATILE, AND DEPENDABLE, TOO.

At a whisper-quiet 10 pages per minute, Kyocera is the fastest in its class. The 79 free fonts give you tremendous versatility. And rest assured, your Kyocera will print hundreds of thousands of trouble-free pages.

UNSURPASSED SERVICE AND SUPPORT.

We promise you the kind of support you want, including a toll-free technical support number. We even guarantee to repair or replace any printer within 24 hours.

Call now, and try a Kyocera in your office for 30 days. We'll have it up and running within 48 hours.

LASER PRINTER QUALITY RATINGS

InfoWorld January 4, 1988

1.	Kyocera F-1000A	6.9
2.	*HP Laserjet Series II*	*6.6*
3.	*Okidata Laserline 6*	*6.5*
4.	*CIE Lips 10 Plus*	*6.4*
5.	*NEC Silentwriter LC-850*	*6.0*
6.	*Canon LBP-811*	*5.6*
	Epson GQ-3500	*5.6*

"Highly compatible Laser Printer beats the market leaders." PC Week

"...fast and full-featured, the best buy in its price class." InfoWorld

KYOCERA

Kyocera Unison, Inc
3165 Adeline Street, Berkeley, California 94703

$99 Puts A Kyocera In Your Office For 30 Days. CALL 800-922-PRINT.

ental and lease subject to credit approval. Rental and lease prices are subject to change without notice. Rental and 48-hour installation available only to businesses, government or educational institutions in Santa Cl an Mateo, San Francisco, Alameda, Contra Costa and Marin Counties. Offer not available to resellers. IBM, Lotus, WordPerfect and Aldus PageMaker are trademarks or registered trademarks of their respective hold

PS/2 CLONES:

Just Around The Corner

By Aubrey Pilgrim

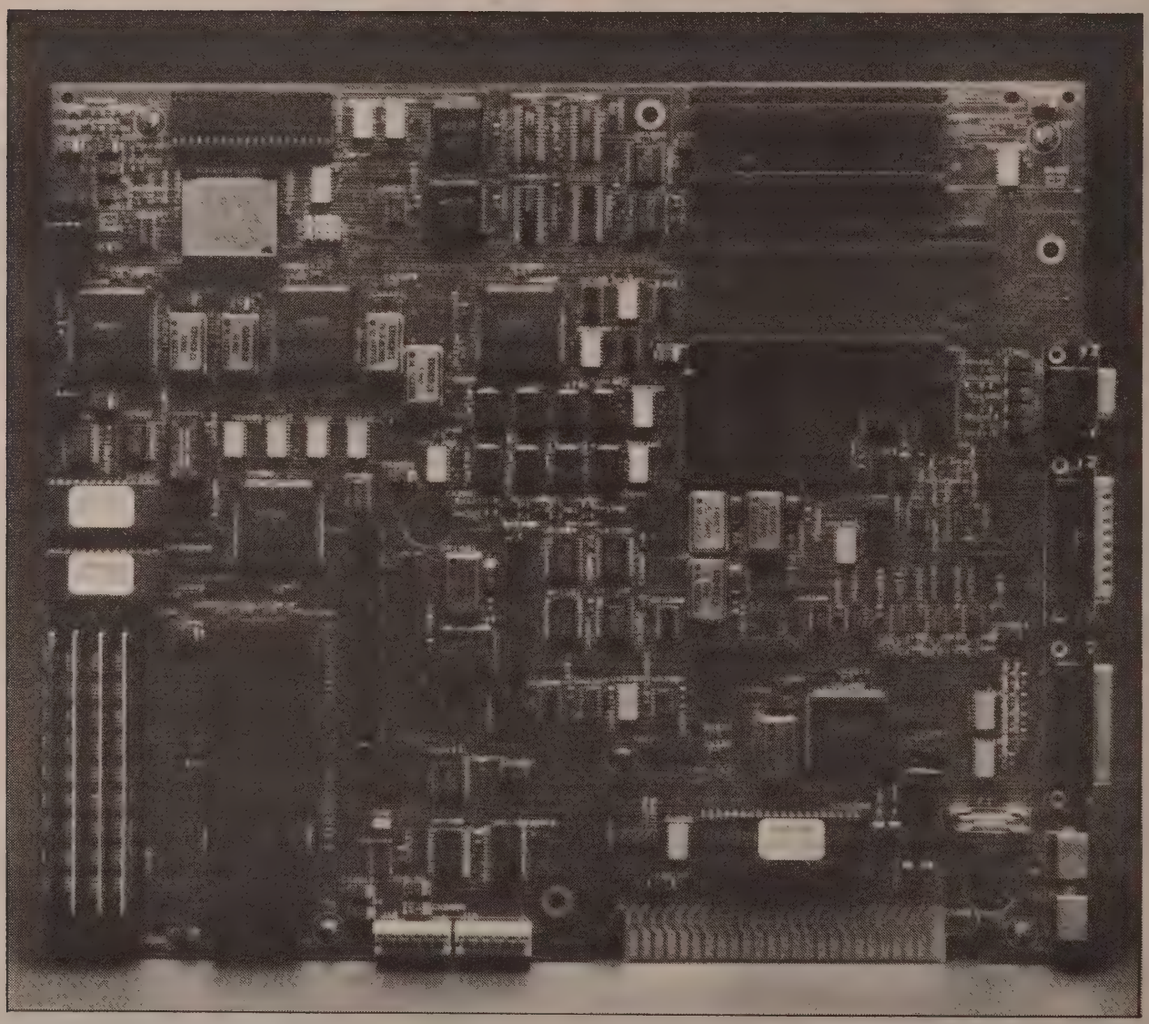


Figure 1—A PS/2 Model 50 clone motherboard. (Photo courtesy of Western Digital.)

The PS/2 systems were supposed to be "clone killers," but they have been about as effective as aspirin against the common cold.

PS/2 clones are coming. The Chips and Technologies and Western Digital Company have developed chip sets that are compatible with the IBM PS/2 Models 30, 50, 60 and 80. (The Model 30 is equivalent to the XT except that it uses the true 16 bit 8086 CPU. The Models 50 and 60 use the 80286 and are equivalent to the AT. The Model 80 uses the 80386 CPU.) They demonstrated their systems at the recent Spring COMDEX in Atlanta.

Both companies have designed motherboards with the Micro Channel architecture to prove out the chips. They are not primarily in the motherboard business, but a spokesman from Chips and Technologies said that they would talk to any manufacturer interested in using their motherboard design. And, of course, their chips.

Western Digital has designed a Model 30 motherboard that they will sell to original equipment manufacturers (OEMs). Western Digital has recently acquired the Faraday Company, which has great expertise in VLSI chips. They also acquired the Paradise Company, which gives them expertise in EGA and VGA monitor boards.

Western Digital's experienced engineers worked with the Faraday and Paradise engineers to reverse engineer the PS/2 systems. Engineers at Chips and Technologies were also able to do the same thing. They then developed chips and systems which are not only compatible with the IBM PS/2s, but are superior in several

Aubrey Pilgrim is the author of the books "Build Your Own IBM Compatible And Save A Bundle" and "Build Your Own 80286 IBM Compatible And Save A Bundle," published by TAB BOOK Company. These books are available in most larger book stores or from the author for $16.95 and $18.95. He is also the author of a third book titled "Build Your Own 80386 And Save A Bundle" which is scheduled to be released later this year. Write to him at 15663 Dodrill Dr., Hacienda Hts., CA 91745.

Z-386

INTEL 80386
EXACT COMPAQ CLONE

4 speed software selectable for full compatible 6, 8, 20 MHz
Equivalent to 25.5 MHz 1 wait state

- One 32-bit, two 8-bit & five 16-bit slots
- 16-bit controller for 2HD & 2 floppy
- 1.2 MB floppy drive TEAC: reads, writes and formats 360K and high density
- 1 MB of memory on 32-bit expansion card; expandable to 10MB, all true 32-bit
- Clock, calendar & hardware reset
- Enhanced style keyboard, keytronic

20 MHz
ZERO WAIT STATE

Best reviewed in USA!

—Tips from Z-Tech Systems—

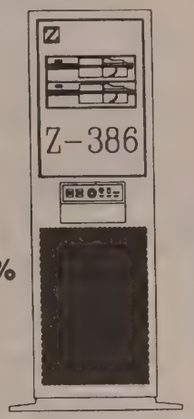
The nicest feature of the Z-386 computer, other than 20MHz speed, is the speed-up memory above 640K. Here's where many Compaq clones missed the boat. Most of the 386 clones have 512K on board. But to expand the memory you need 32 bit memory card, which doesn't exist yet. So you end up with 16-bit data transfer with D-RAM. Z-386 uses all of its memory on special 32-bit memory card, which comes with it. It is expandable up to 10MB of static RAM. Static RAM is much faster than D-RAM, does not require refreshing cycle which wastes CPU time. The extra 384K, other than 640K, can be used either as cache memory to speed up data I/O, or to relocate the EGA Bios into RAM for ultra fast drawing.

Call for brochure!

$2195

Runs OS/2 100%

vertical case costs $190 extra.



Z-286 PLUS

640k, 100ns RAM

- Expandable to 1 MB (640x384)
- Keytronics keyboard, 101 keys
- Mono graphics card Hercules compatible & flicker free
- UL listed power supply & HD controller
- 1.2 MB Teac floppy R/W & formal 360K

8/12 MHz
ZERO WAIT STATE

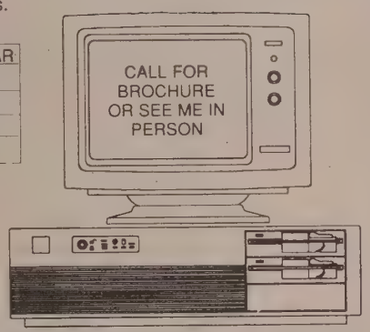
* BUS speed selectable (8 or 12 MHz) that eliminates many of the existing problems with high speed computers when using add-on cards, i.e., memory boards, Network cards, and other devices that are bus-speed sensitive.

Break-through in 286 Design.
32K 45ns Cache memory built in

$1199

Similar design as today's 386 systems.

	SI	SPEED BAR
IBM 8 MHz	7.1	8
COMPAQ 12 MHz	12.2	12
AST PREMIUM	11.5	13
Z-286 PLUS	13.9	16.1



NEW FASTEST XT ON EARTH!
Z-Turbo Plus

Why buy a 286 accelerator card?

12 MHz

$666

- Like No Others
- Zero Wait State Turbo XT
- 640K RAM. 120ns Memory
- Dual Speed 4.77/12 MHz
- AT Look-alike, Case & KB
- U.L. Listed Power Supply
- Mono-graphics W/PRN
- Power & speed LEDs
- 360K Fujitsu Dr.

TOO SUPERIOR TO IGNORE!

Warning: Other XT Turbo Clones do not handle the disk I/O operation at 8 MHz with safety. They experience floppy drive hang-up once in a while. That makes the process unreliable. Z-Technology overcame these problems to let you enjoy the latest technology. You can read, copy, format at 8 MHz with no worries.

SI = 4.9
SPEED BAR = 5.0

80% THE SPEED OF IBM AT

XT Turbo

$599

- CPU 8088-2
- 640K on Board. 2 speed 4.77/8 MHz
- 8 expansion slots. Fujitsu drive 1/2 ht.
- Mono-graphics card with printer port
- AT style keyboard

TODAY'S BEST BUY!

LQ1000 & Tractor	549	40 MB ST-4053	559
FX-86E-286E	349/479	40 MB Miniscr 28ms	579
LX-800	219	72 MB CDC 18ms	950
NEC P7/P6	569/429		
NEC P2200	369	Memory Exp, EMS 4AT	119
IBM Printer XL	489	80287 8/10 MHz	259/299
Samsung Monitor	89	Logimouse Ser/Bus	79
EGA Casper	395	Modem, Evrx 12/24	95/185
Sony Monitor	639	Tape Backup 60MB	595
IBM Quiet Writer III	999	Irwin Tap-Bakup 10MB	150
Genoa VGA 800x600	239	Best Surge Protector	29
EGA Everex Deluxe	179		
EGA 640x350	139		
Paradise VGA Plus	295		

Compaq 286-12 MHz 1599

Novell Network

Netware 286 4 work stations (software)	595
Netware 286 100 work stations (software)	1959
Ethernet Card Plus, up to 16 MHz	329

Call for Quotation & brochure or try to see our systems the best possible way, in person.

INSTALLATION*TRAINING*ON SITE SERVICE AVAILABLE

HP Laser Printer
Series II w/toner **$1699**
1MB RAM **$339**

Z-Technology Systems

441 GRAND AVE. (WEST)
SO. SAN FRANCISCO, CA 94080

PLEASE VISIT OUR SHOWROOM
(415) 588-3386
6 Days a Week M-Sat 10-6

GRAND OPENING!

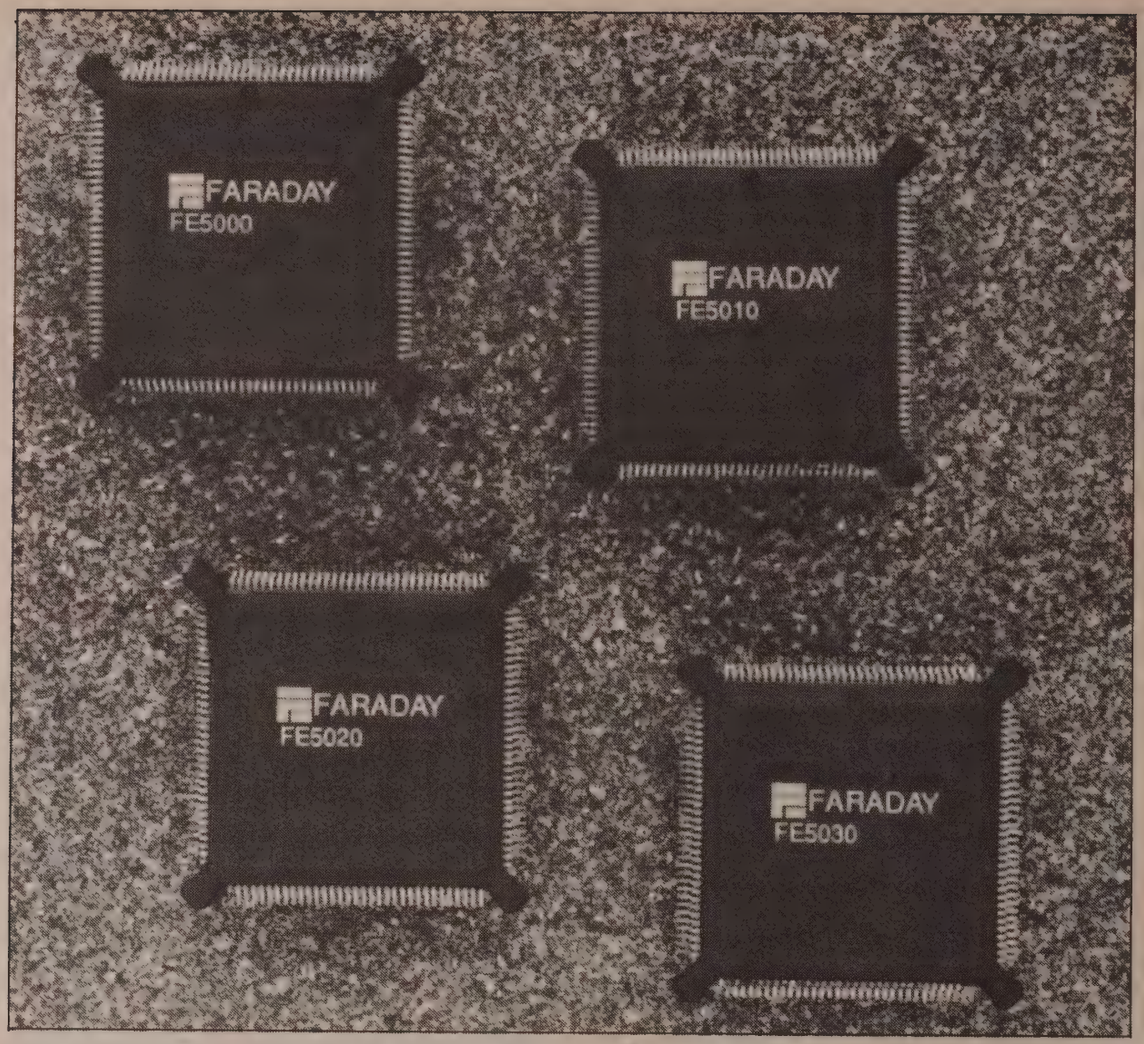


Figure 2—The four main VLSI chips on the motherboard. (Photo courtesy of Western Digital.)

ways. Both companies claim that their designs are faster, offer more functionality, and use fewer chips than the IBM designs. They also cost less than the IBM systems.

Several companies are now using these new chips to develop PS/2 clones. Both Dell Computer Corporation and Tandy Corporation demonstrated PS/2 clones at the Spring COMDEX. Kaypro has just recently demonstrated a working prototype PS/2 clone. You can be sure that there will be many others on the market very shortly.

The PC Standard

When IBM introduced the PC in 1981, they made the schematics and specifications available to anyone who wanted to pay for them. They did the same when they later introduced the XT and the AT. This made it fairly easy for the clone makers to design IBM compatible products.

A standard was created. Soon there were millions of clones that could do everything the IBM machines could do. And the best part was that they were selling for about half the cost of the machines with the true blue logo.

IBM owns over 10,000 computer related patents. All of the clones infringed on one or more of these patents in some manner. But IBM more or less ignored most of those violations except for those designs which infringed on its BIOS.

IBM could have pressed the smaller clone manufacturers, and could possibly have prevented them from designing and selling the clones. If this had happened, we would never have had a PC standard. The PC market would be in utter chaos. It would be like the early days of CP/M when each manufacturer had its own proprietary disk format system that was incompatible with all others. Each manufacturer also had its own hardware which was incompatible with other systems. With a single standard, companies were able to spend the time, money and effort to develop vast quantities of compatible software, which would have been impossible in the absence of a standard.

The consumers, the clone makers and even IBM benefited from the fact that there was a standard. The competition forced lower prices and many new designs and improvements. Many businesses installed IBM systems simply because of the wide base of available hardware and software.

The number of PC compatibles sold has actually increased since the introduction of the PS/2 system.

But IBM did lose quite a lot of its lion's share of the market. In an effort to regain this lost market, they introduced the PS/2 systems in April of 1987. These new systems were supposed to be "clone killers," but they have been about as effective as aspirin against the common cold.

Why The PS/2 Was Not More Popular

Everyone will agree that the PS/2 systems were a step forward and a major improvement over the older technology. Nonetheless, many people have ignored them. At the Las Vegas COMDEX last November, IBM claimed to have shipped a million systems (at a recent press conference they claimed sales of two million). Several business analysts did not question the statement that IBM may have shipped that many, but they pointed out that about half of those million systems were still sitting on dealers' shelves and in warehouses.

So why hasn't the PS/2 been more popular? There were several reasons.

When IBM introduced the PS/2s there was about five billion dollars' worth of low-cost hardware available for the XT, AT and 386 systems. There was about the same amount of software available. That was enough hardware and software for the clones to do just about everything that anybody would need to do.

The cost of a PS/2 system, meanwhile, was about twice that of an equivalent clone. Since IBM was the only game in town, there wasn't too much hope that Big Blue would lower its prices. There was very little hardware available for the PS/2s, and IBM didn't seem to encourage third parties to develop any.

So it's not unreasonable that many people didn't get too excited when IBM launched their new systems. The number of compatibles sold has actually increased since the introduction of the PS/2 systems.

Advantages Of The PS/2

So at the present time many people still aren't very excited about the prospect of PS/2 clones. But most of them will change their minds when the clones arrive in volume and with lots of low cost optional hardware.

The PS/2 system will become the new standard. These systems offer several improvements over the older systems. The Micro Channel architecture (MCA) gives much better noise immunity and makes it easier for vendors to comply with the FCC rules. The AT bus both radiates and picks up electro magnetic interference (EMI) and noise. This EMI restricted the bus data transfer rate to 330 Kbytes per second. The PS/2 MCA can achieve 10 Mbytes per second on the 80286 models and up to 30 Mbytes per second on the 80386. The MCA allows plug-in boards to be configured by software so that DIP switches can be eliminated. The AT bus can support a maximum of two processors, the MCA allows multiple processors.

Patent Considerations

IBM secured patents for hundreds of their PS/2 designs and let it be known that its large staff of corporate lawyers would promptly sue anyone

At Computers, Installation & Service,

We Emphasize the Service!

(We Also Install Computers.)

We're CIS. Computers, Installation & Service. But just because we put service last in our name doesn't mean that we don't put it first in our business.

And that is very important for your business. Because these days, almost anyone will sell you a computer. But not everyone will provide the service and support you need to make your system do the things you need it to do.

The Wrong Decision Can Cost You Thousands of Dollars

The business world is full of "horror stories" about companies making bad choices in computer systems. Making the best and most cost-efficient choice is simply a matter of identifying your business needs and finding the most effective and least costly way of satisfying those needs.

Authorized Dealer and Service Center for These Systems and Printers:

COMMODORE AMIGA
Authorized Amiga Dealer

EPSON PRINTERS

COMPAQ

HEWLETT PACKARD

WYSE

AST RESEARCH INC.

And Many More!

CIS Guarantees Value! You'll Get the Finest Name-Brand Products at the Lowest Possible Prices Available.

With our business combination of **Sales**, **Service**, **Supplies**, **Training** and **Consulting**, we are a "one-stop shop" for solving your computer problems. Why not put our organization to work for you?

We Work With You to Find Your Specific Solutions

Listen to what some of our clients have said about CIS:

Dr. Harold Kristal, DDS: "Whatever we need, whenever we need it, CIS is there. We have found their service to be unsurpassed."

Tammra Butler, Owner, *Administrative Assistant:* "CIS supplies all of our computer needs, from service to supplies. We've shopped around and found their prices to be the lowest and their service on both repair and accessories to be unsurpassed."

We Deliver at the Lowest Possible Prices Available Anywhere!

You are probably paying more than you need to be for your computer and office supplies. Find out for sure! Shop by phone with CIS. It's easy! Our 480-page full-color "Office Needs Catalog" is all you need to get the products you want at unbeatable savings. . . brought right to your door!

Call us today for a **free** no-obligation consultation. You'll get **free** our 480-page full-color "Office Needs Catalog." CIS. . . Solving Your Computer Problems. Serving Your Business Needs.

CIS
COMPUTERS, INSTALLATION & SERVICE

"Solving Your Computer Problems"

13201 San Pablo Avenue, Suite 105
San Pablo, California 94806
(415) 232-1818

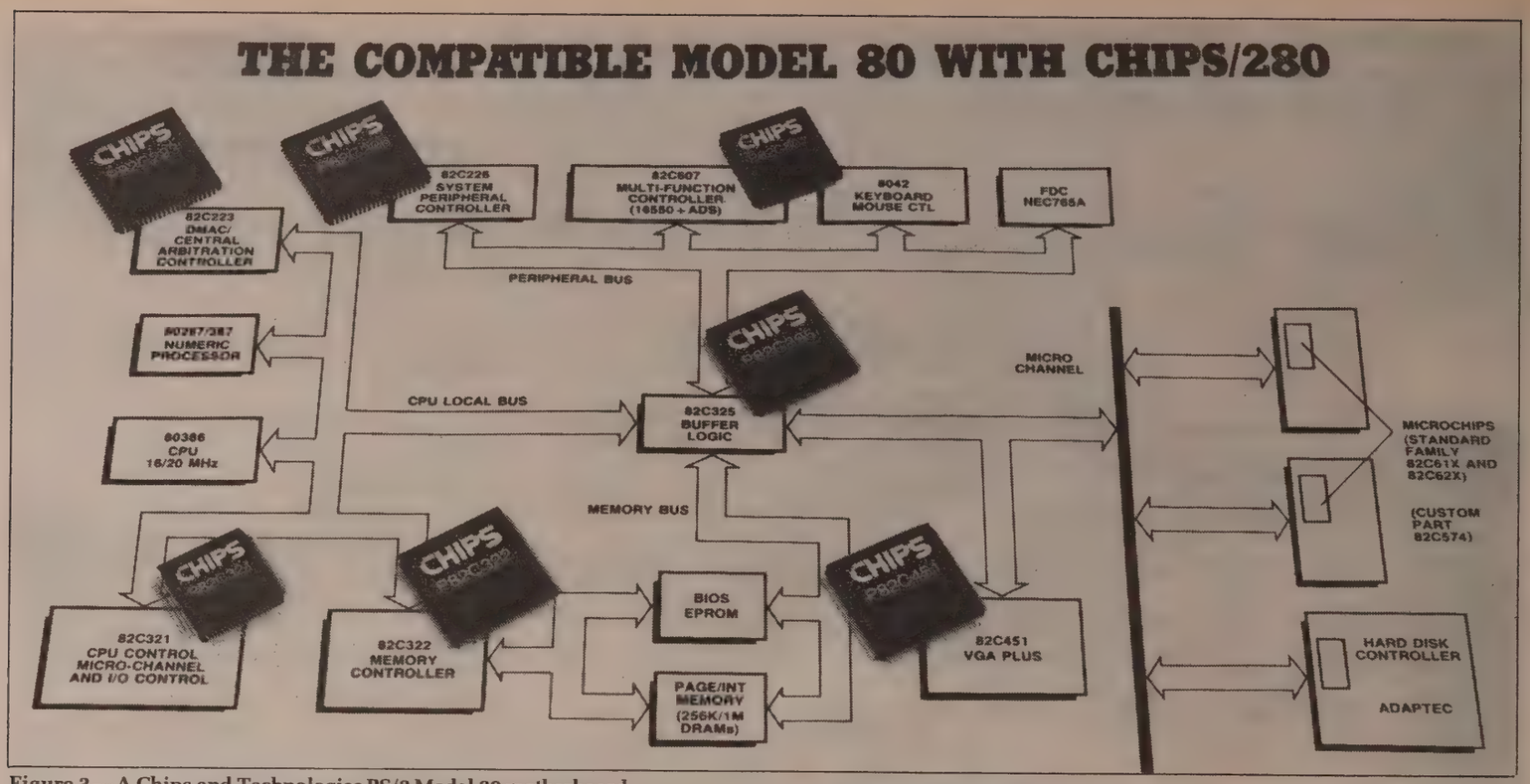


Figure 3—A Chips and Technologies PS/2 Model 80 motherboard.

who violated any of their designs. This time IBM did not make the schematics or design criteria for their PS/2 products available. This has made it much more difficult for anyone to duplicate the PS/2s. It took lots of time, expertise, money and resources, to reverse engineer the PS/2s and create a PS/2 compatible.

In doing reverse engineering, most companies will make every effort not to infringe on IBM's patents. But with IBM's enormous number of computer patents, it is almost impossible to avoid some type of infringement. Since there are no schematics and specifications, it is also impossible to know whether or not a particular design violates IBM's patents.

But IBM said that was no problem. If someone had a design and wanted to know whether it violated any of their patents, all they had to do was submit it to IBM. Their engineers would carefully review the schematics and specifications, then tell the person whether or not it was in violation.

Most people know that IBM is honest and would never appropriate someone else's design. Still, many are reluctant to take a chance.

Patent Licenses

No one would dispute the fact that IBM should be paid a reasonable license fee for its rightful patents. However, what IBM decides is reasonable might be so unreasonable that it would put thousands of vendors out of business.

IBM recently announced that they would not license patents to any company that did not recognize its liability to IBM for the previous use of its patents on PC, XT and AT clones. They want a one percent retroactive royalty on all units sold before April 1988. If a company does not sign up and pay the royalties by the end of 1988, then the royalties will increase to five percent of all units sold. Only then would IBM talk to those companies about a license for the PS/2.

Compaq and several other larger companies have been expecting this action for some time. They set aside money to pay these fees on units sold in the past. But very few of the smaller clone vendors have money to pay even one percent. If they are forced to pay IBM five percent on all of their previous sales, thousands of them will be bankrupted.

But some companies don't seem to be too worried. The fact that IBM waited so long before demanding the royalties may make it difficult for them to collect. Many of the PS/2 clone makers are proceeding to develop their systems as if there was no question on the patent rights. One spokesman said that if IBM wanted to know what was in his system, then they could spend the money and time to reverse engineer it, then tell him whether it was in violation or not.

The New Standard

IBM has completely ignored the obvious fact that standards are good for them as well as for the consumer and the entire industry. The clones are coming to market despite the efforts of IBM to prevent them. And because there will be lots of PS/2 clones, they will become the new standard. There will be lots of competition and prices will come down to a reasonable level. Much new hardware and software will be developed for the new standard.

In a very short time you will be able to buy PS/2 motherboards and all the components necessary to build your own for a very reasonable price. My next book will probably be titled "Build Your Own PS/2 Compatible And Save A Bundle." □

One spokesman said that if IBM wanted to know what was in his system, they could spend the money and time to reverse engineer it, then tell him whether it was in violation or not.

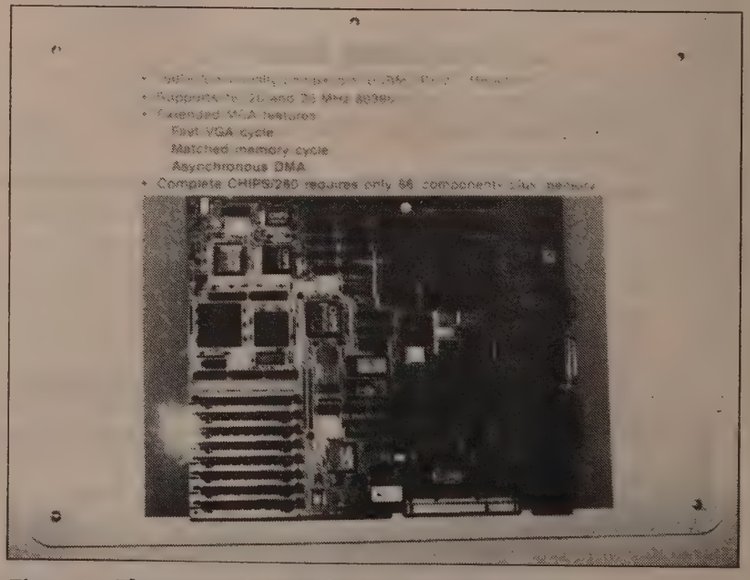


Figure 4—The seven main VLSI chips on the motherboard. (Photo courtesy of Chips and Technologies.)

IBM • HP • SONY

TOSHIBA • MINISCRIBE • ZENITH • LOTUS • RAM CHIPS

COMPAQ • NEC • AST • INTEL • EPSON • EVEREX • SEAGATE

3 YEAR ANNIVERSARY
HIGH QUALITY WITH LOW PRICES

Q

D

G

HARD DISKS
FUJI • MAXTOR • MINISCRIBE • PLUS • SEAGATE

KEYBOARDS
HONEYWELL 84 Key, 101 Key

MICE
LOGITECH • MICROSOFT

MONITORS
NEC • SONY • THOMSON • ZENITH

BOARDS/OPTIONS
AST • GENOA
JETWARE • MODEMS
ORCHID-Designer VGA $285
PACIFIC DATA-1MB RAM FOR HP LASERJET II $299
PARADISE • TALLTREE-J Laser
WESTERN DIGITAL

CHIPS
INTEL • RAM • WEITEK

COMPUTERS
AST
286 Models 80, 90, 120, 140, 170, 386

COMPAQ
286-Model 1 386-20 Models 60, 130, 300 Portable 386-40MB or 100MB

EVEREX 386

IBM PS/2 Models 30, 50, 60, 80

NEC Multispeed EL/HD

QUALITY Premium Grade Clones
286-10/0, 640K, keyboard $985
386-20, 2MB, keyboard $2700

SHARP

TOSHIBA
Models T1000, T1200, T3200, T5100

ZENITH Models 181, 183

FAX
BROTHER • CANON • NEC • PANASONIC • SHARP • TOSHIBA

PRINTERS
CITIZEN

EPSON-Models FX 86E, FX286E, LQ500, LQ850, LQ1050, LQ250

HEWLETT PACKARD
Deskjet, Laserjet II

IBM-Proprinter

OKIDATA

TOSHIBA-Models 321SL, 341SL, 351C, 351SX

SOFTWARE
ALDUS Pagemaker
dBASE III +
IBM PC DOS 3.3/MS DOS 3.3
Lotus 1-2-3/Symphony/HAL
PC MOS/386 Single/Multi
Ventura Publisher
Wordperfect 5.0

TAPE DRIVES
ARCHIVE **IRWIN**
MOUNTAIN **SYSGEN**
WANGTECH

SPECIALS

QDG XT
- 20 MB HD 640 KB
- 360 KB Floppy
- Mono Card/Par Port
- Amber Monitor

$899

QDG 286
- 10 MHz
- Honeywell Keyboard
- 1.2 Floppy Drive
- 640 KB Ram
- Mono Card
- Amber Monitor

$1099

Genoa Super EGA $189

PLOTTERS DIGITIZERS
HITACHI • HEWLETT PACKARD
HOUSTON INSTRUMENTS
KURTA • NUMONICS
ROLAND • SUMMA

SCANNERS
HEWLETT PACKARD
MICROTEK LABS
PRINCETON GRAPHICS

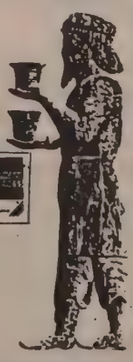
POLICIES:
- We accept certified checks, cashier checks, wired funds
- All orders over $500 must be paid by cashier check.
- Minimum order $100.
- Allow 1 week for personal & company checks (maximum amount $500)
- Prepaid orders get 1% discount
- Add 3% for Visa/Master Card Purchases
- Allow one week for shipping
- 15% Restocking Fee On all return merchandise
- Customer pays return merchandise shipping
- All prices subject to change without notice
- Some prices are quantity.
- Orders over $10,000/month get 1% discount
- Saturday orders get free shipping
- HP is a registered trademark of Hewlett Packard. AST is a registered trademark of AST. Compaq is a registered trademark of Compaq. IBM is a registered trademark of International Business Machines.

VISA

QUALITY DISTRIBUTION GROUP
(213) 478-9811

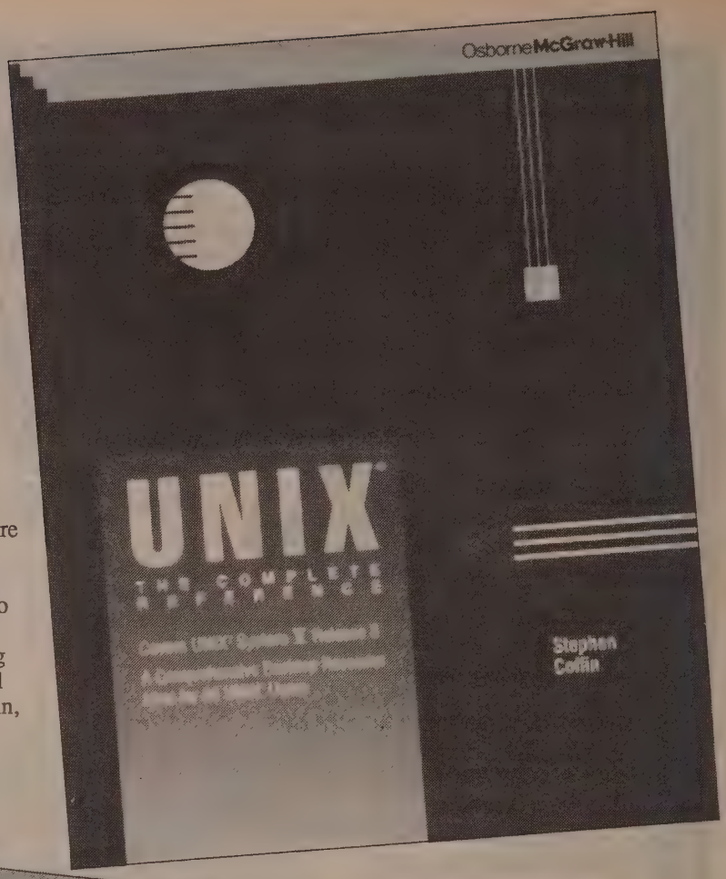
1-800-MICRO 86 (642-7686)
11651 W. Pico Blvd., Los Angeles, CA 90064
For Technical Services Call (213) 478-8819
QUANTITY PRICES AVAILABLE

FAX (213) 312-5065

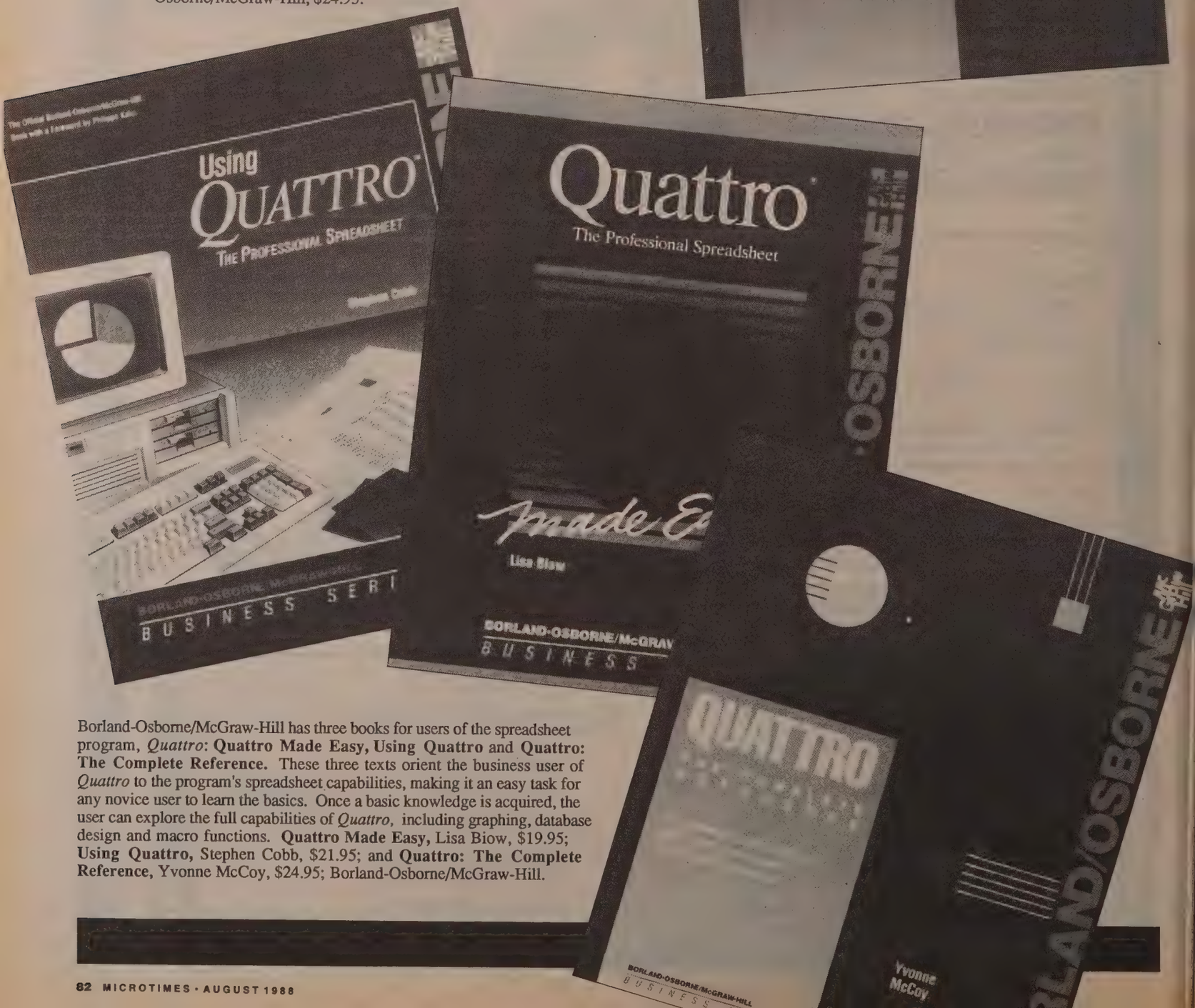


IRWIN • ARCHIVE • SUMMAGRAPHICS • KURTA

BOOK BUYERS GUIDE



Now there's an everything-you-ever-wanted-to-know book about that software enigma, UNIX. **UNIX: The Complete Reference** will help diminish the intimidating mystique of the world's most powerful and flexible system software, UNIX System V Release 3. Even the beginner will find it easy to understand the many capabilities of UNIX with this new text. With an understanding of UNIX becoming more important as UNIX gains increasing popularity for microcomputers, the novice and veteran UNIX user alike will value this resource. **UNIX: The Complete Reference,** Stephen Coffin, Osborne/McGraw-Hill, $24.95.

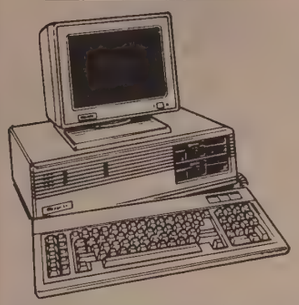


Borland-Osborne/McGraw-Hill has three books for users of the spreadsheet program, *Quattro*: **Quattro Made Easy, Using Quattro** and **Quattro: The Complete Reference.** These three texts orient the business user of *Quattro* to the program's spreadsheet capabilities, making it an easy task for any novice user to learn the basics. Once a basic knowledge is acquired, the user can explore the full capabilities of *Quattro,* including graphing, database design and macro functions. **Quattro Made Easy,** Lisa Biow, $19.95; **Using Quattro,** Stephen Cobb, $21.95; and **Quattro: The Complete Reference,** Yvonne McCoy, $24.95; Borland-Osborne/McGraw-Hill.

DISCOVER DARCOM

SINGLE SOURCE–FULL SERVICE
COMPETITIVE PRICES

PERSONAL COMPUTERS



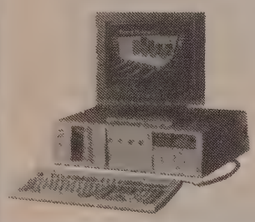
DATATECH
Turbo 8088 System
Complete $499

DATATECH
Turbo 286 System
Complete $899

Amiga AST Compaq Datatech Everex IBM Samsung Wyse

EVEREX
COMPUTER SYSTEMS DIVISION

286/386 Systems
In Stock Now!



Call!

We are an authorized Everex Dealer
Made in the USA

LAPTOPS

In Stock Now!
As low as $699

NEC
Sharp
Toshiba

Seagate

ST225 20MB Kit
Save
$249

OKIDATA
by OKI AMERICA company

Specials

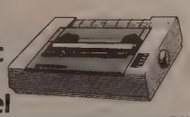
Microline 390
"New" ~~$699~~
$479

Okidata 192+/193+ $299/399
Okidata 393 . . . . . $969

PRINTERS

THE BEST FOR LESS EPSON

- Brother
- Citizen
- Epson
- Fortis
- HP
- NEC
- Okidata
- Panasonic
- Toshiba
- And More!



LQ-850
$499
Limited Quantity

NEC

Multisync II
EGA/VGA Monitor
$579

w/Vega 480 Card. $749

PARADISE™

VGA Plus
Card
$279
List $449

SOFTWARE

LOTUS 1-2-3
~~$495~~
Only $299.95

SAVE on All Major Authors

Microsoft Works
Only $119.95

Look before you leap.

We Stock Amiga Software
COMMODORE AMIGA 500,2000

Call for Current Prices

Thinking about buying a hot graphics computer to liven up your business presentations? Before you make any costly snap decisions, you owe it to yourself to stop and look at the Commodore® Amiga 2000.

Only Amiga Makes It Possible

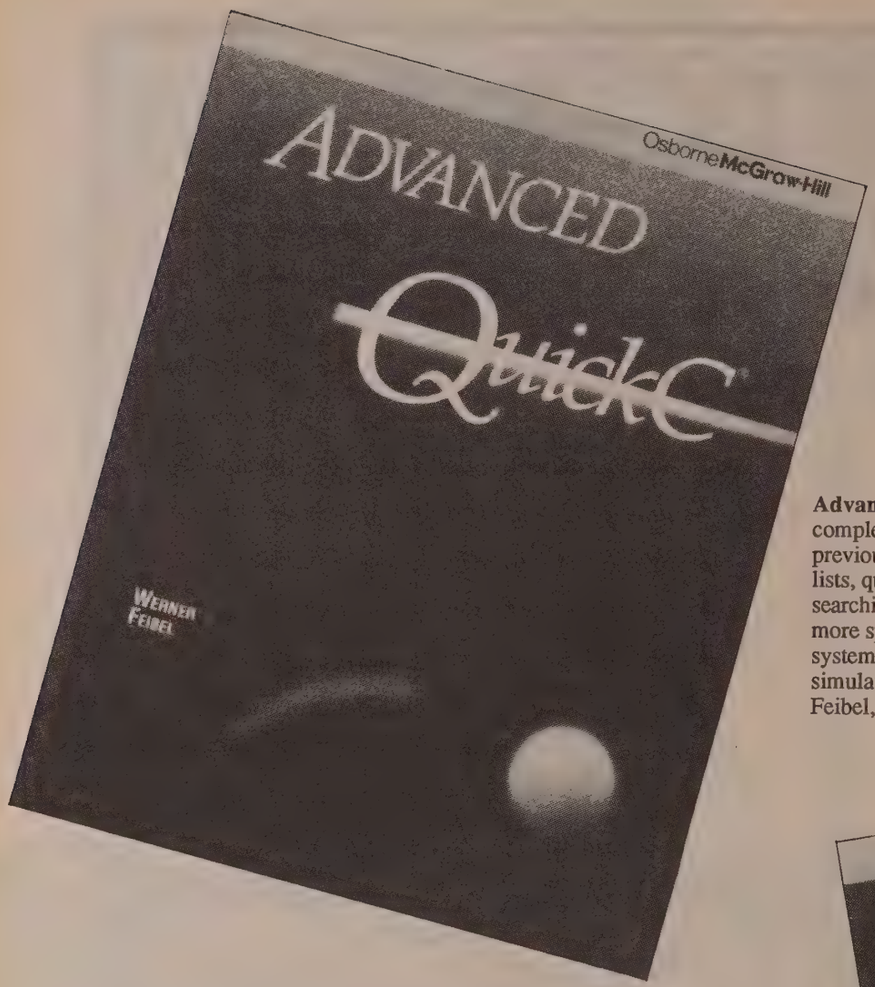
DARCOM Computer Products, Inc.
YOUR SINGLE SOURCE-FULL SERVICE DEALER

558-C Pilgrim Drive, Foster City, CA 94404
Prices subject to change without notice.

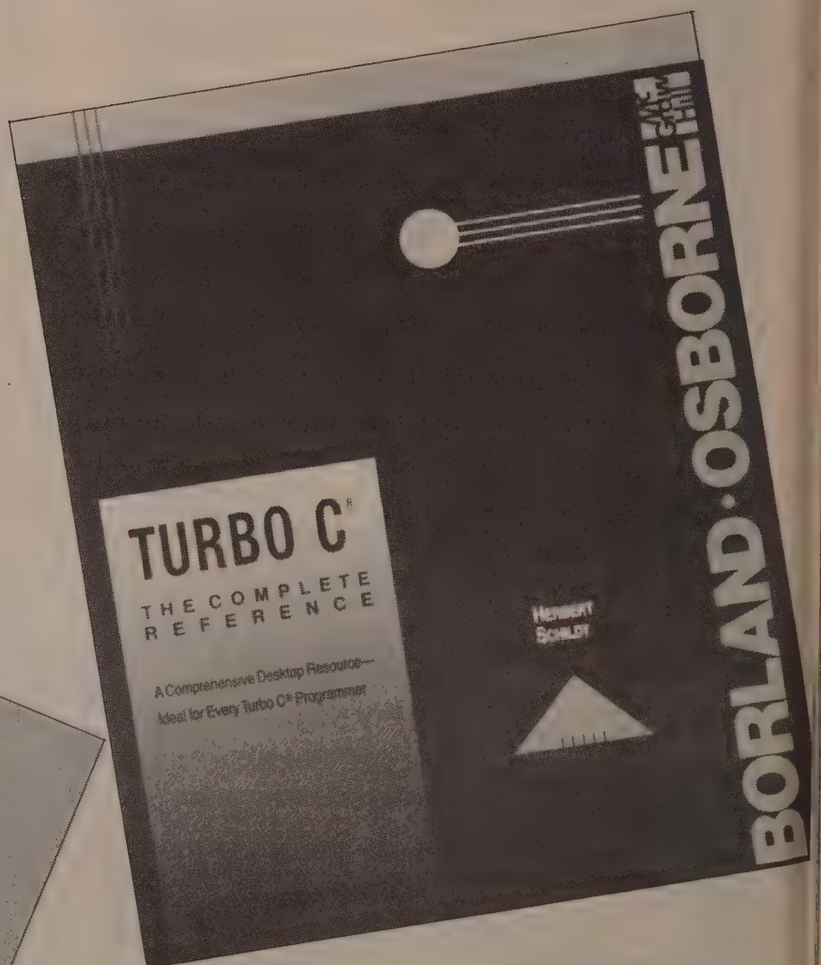
(415) 341-7112

PC, XT & AT ARE REGISTERED TRADEMARKS OF INTERNATIONAL BUSINESS MACHINES, INC.

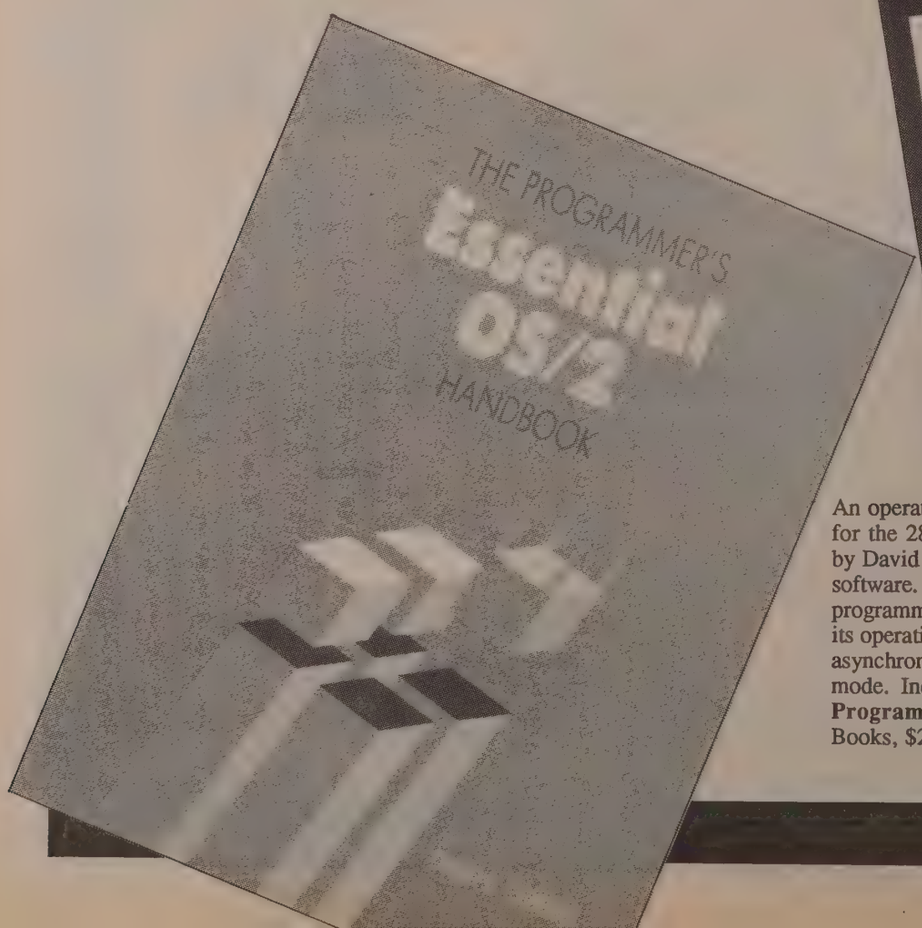
BOOK BUYERS GUIDE



Advanced QuickC explains to the experienced C programmer how to build complex QuickC programs using Microsoft's compiler. Readers with previous C programming experience will find discussion of recursion, linked lists, queues, stacks and tree. Author Werner Feibel also discusses sorting and searching, expression parsing, data massage and graphs. Readers interested in more specialized tasks will find details on communication with the operating system, generating random numbers, performing statistical analyses and simulation involving common distributions. **Advanced QuickC**, Werner Feibel, Osborne/McGraw-Hill, $21.95.



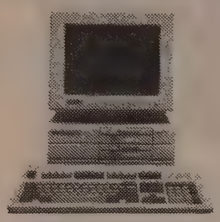
Another new book from Borland-Osborne/McGraw-Hill is **Turbo C: The Complete Reference.** Author Herbert Schildt's book on Turbo C is a nationwide best-seller that provides the programmer with commands, library functions, codes and applications. Graphics functions and the Turbo C Librarian are also discussed. **Turbo C: The Complete Reference,** Herbert Schildt, Borland-Osborne/McGraw-Hill, $24.95.



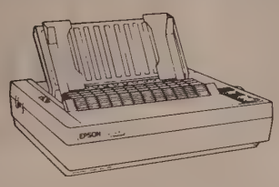
An operating system that remains a mystery to many is Microsoft's OS/2 for the 286 and 386. **The Programmer's Essential OS/2 Handbook** by David E. Cortesi will shed some light on this important new system software. This release from M&T Books provides the applications programmer with an informative overview of OS/2, explaining such aspects of its operation as how programs get information about the system, how asynchronous tasks are coordinated and how OS/2 uses the CPU in Protect mode. Includes information not included in the original documention. **The Programmer's Essential OS/2 Handbook,** David E. Cortesi, M&T Books, $24.95.

OUR SYSTEMS GROW WITH YOUR BUSINESS

EPSON EQUITY I+ : BUSINESS SYSTEM



+



+

Q&A

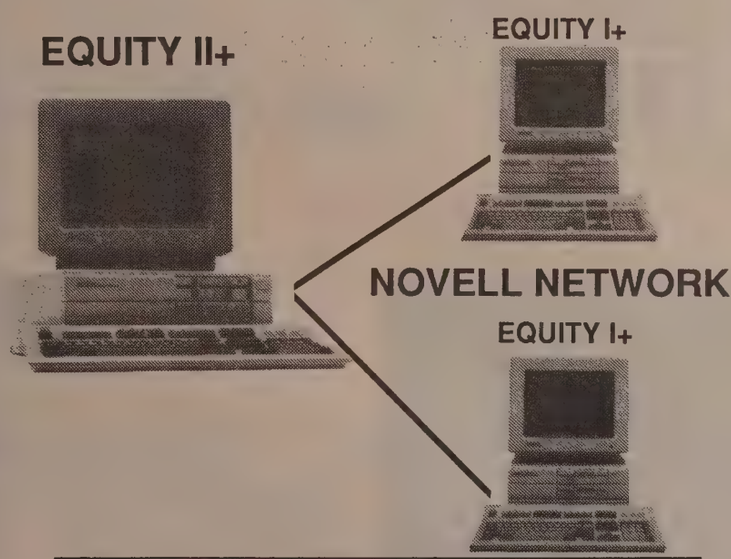
= ONLY $1,995

EQUITY I+
* 20MB Hard Drive
* 640KB RAM Memory
* 8088-10 CPU
* Monitor & Video Adapter

LQ-500 PRINTER
*24-PIN Dot Matrix for high quality text & graphics
* High Speed Operation
*Versatility to handle a variety of paper & forms(up to 80 columns)
* Compatible w/ most programs for the PC. Reliable.

Q&A Version 3.0
The #1 rated File Manager & Word Processor integrated together to simplify all your filing & word processing needs.
* Easy to learn &use
* Network Support
* Tightly Integrated w/ Lotus & dBase II/III

EPSON EQUITY II+ : ADVANCED BUSINESS SYSTEM



INCLUDES

1. (1) Equity II+ with:
   *80286-12 MHZ CPU
   *40 MB Hard Disk Drive
2. (2) Equity I+ with:
   *360K Floppy Drive
   (workstations)
3. (3) Monitors & Video Board
4. NOVELL Entry Level Network Software.
5. (3) Arcnet Network Interface Boards w/ Passive Hub.

COMPLETE PACKAGE ONLY:

$5,699

OPTIONAL: TURBO PARAGON

Only $1995
(Multi-user version)
Single User $995

Business Accounting Software/Multiuser
AR, AP, PR,GL,
Sales Analysis, Invoicing,
Inventory, Job Cost,
The Reporter, AutoFinder

Managing Technology
"Builds Business Success"

BUSINESS INTEGRITY
PRODUCT KNOWLEDGE
EXCELLENT PRICING

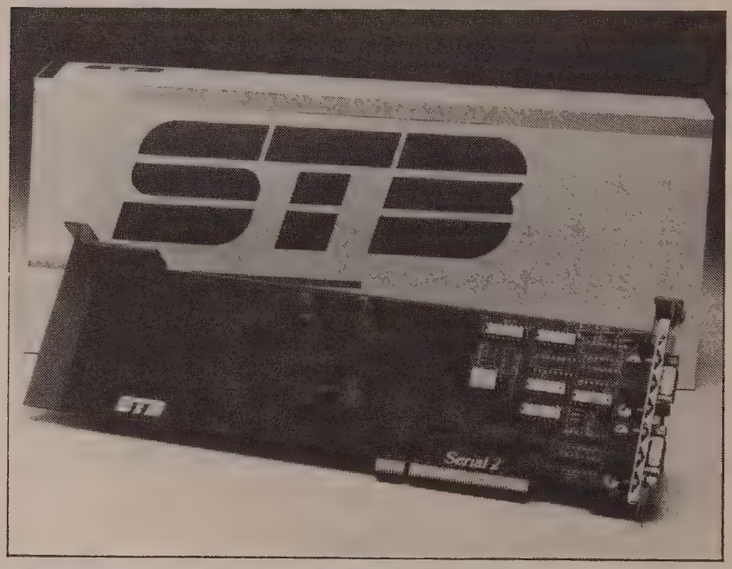
TWO CONVENIENT LOCATIONS TO SERVE YOU:

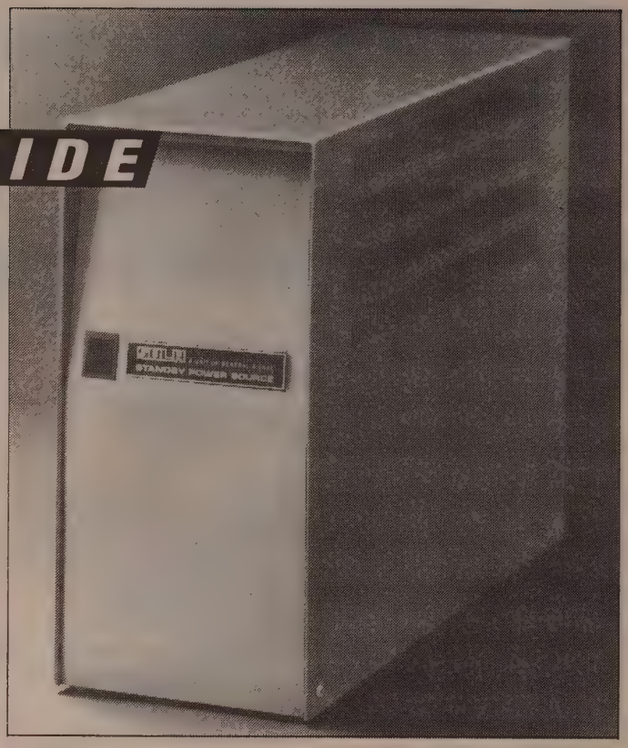
SAN FRANCISCO: (415)386-2700
4411 GEARY BLVD.
SAN FRANCISCO, CA 94118

FOSTER CITY: (415)578-1276
1151 TRITON DRIVE, SUITE "B"
FOSTER CITY, CA 94404

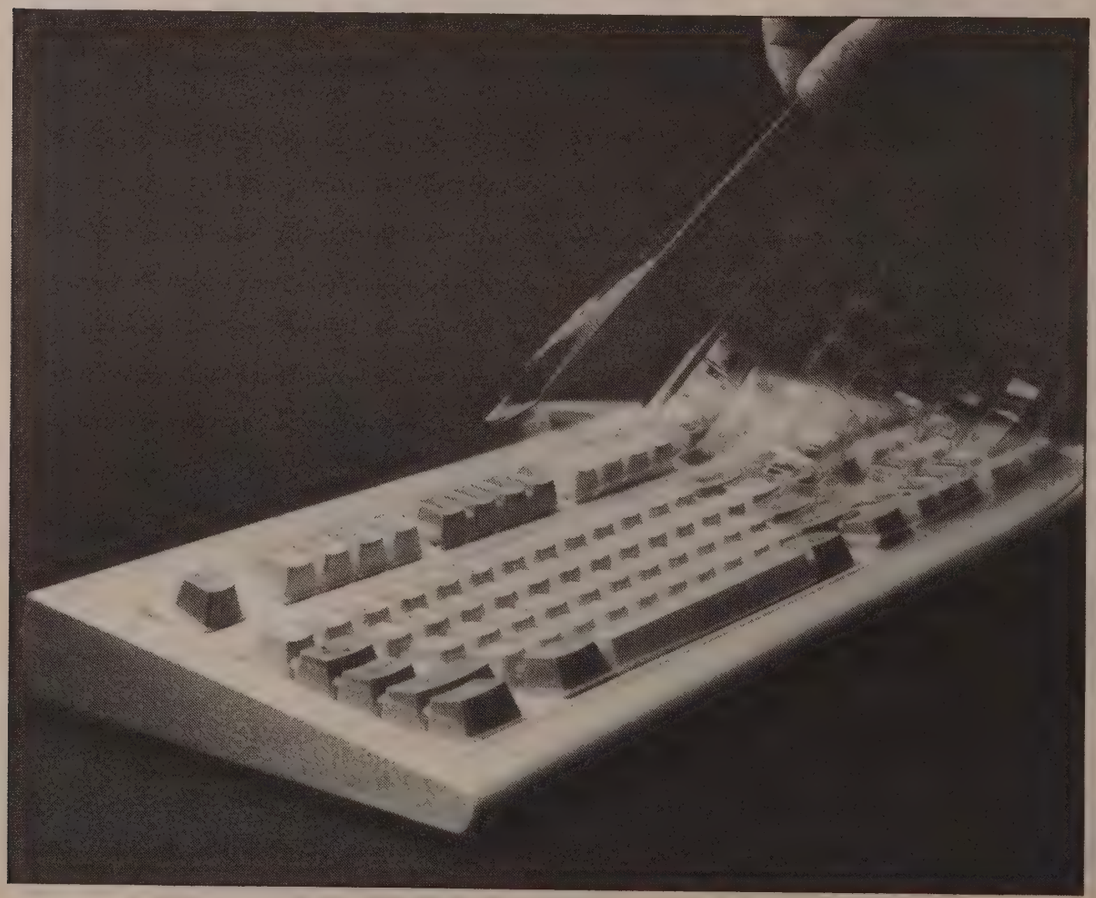
PC BUYERS GUIDE

New Two-Port Serial Board For PS/2 Systems
IBM PS/2 users who would like greater I/O capabilities may consider the Serial 2 fully programmable asynchronous serial adapter from STB Systems. Designed to be compatible with the IBM Dual Async Adapter/A, the Serial 2 assures that all software that "directly" supports the features of the Dual Async will also be fully supported by the Serial 2. The two RS-232C serial ports are configuarable as COM 1 through COM 8, and can add and remove start bit, parity bit and stop bits. ($239.) STB Systems, Inc., 1651 N. Glenville, Suite 210, Richardson, TX 75085. (214) 234-8750.





1800VA Ensures Constant Source Of Power For Electronics
The UL listed 1800VA from Sola works as a standby power source for computers and other sensitive electronic equipment when an uninterruptible power system is not needed. Protection is provided by switching from line power to battery/inverter power within a half cycle when line voltage drops below -15% of nominal. At that point, the load is transferred to the inverter within 4 to 10 milliseconds. The 1800VA also guards against transients and protects from electrical noise above 10kHz when the AC line is present. An audible alram sounds to signal line failure and repeats every 20 seconds to remind the user that battery operation is in effect. ($1899.) Sola, A Unit Of General Signal, 1717 Busse Rd., Elk Grove Village, IL 60007-5666. (312) 439-2800.



SafeSkin Protects Keyboards From Spills, Dust And Food
Because computer keyboards don't mix well with foreign substances like coffee, food crumbs and cigarette ash, Merritt Computer Products offers users SafeSkin, a protective cover of clear, flexible polymer. SafeSkin is contoured to fit each key without affecting adjacent keys and to preserve a normal keyboard feel. SafeSkin is available in sizes to fit most popular computers, laptops, workstations and third party keyboards. ($29.95.) Merritt Computer Products, Inc., 4561 S. Westmoreland, Dallas, TX. 75234. Rich Liebman, (214) 339-0753.

NORDIC COMPUTERS

Best Prices
Best Service
Best Quality

TURBO 8088 SYSTEM A $759

10 MHz
2 Floppy Drives
640K RAM
Monographic Card
Monochrome 12" Monitor on Swivel
Keyboard
Serial/Parallel Port
Clock/Calendar

TURBO 8088 SYSTEM B $959

10 MHz
1 20 MB Hard Disk
1 Floppy Drive
640K RAM
Monochrome Graphics Card
Monochrome Monitor on Swivel
Keyboard
Serial/Parallel Port
Clock/Calendar

386 SYSTEM $2195

16 MHz—0 Wait State
64K Cache Memory
1024K RAM
Hard Disk Floppy Controller
1.2 MB Drive
Monochrome Graphic Card
Monochrome Monitor on Swivel
Enhanced Keyboard
Parallel Port/Serial Port
Clock/Calendar
FEATURES THE MYLEX BOARD

Upgrade options for AT/XT

CGA color monitor w/CGA card	$195
EGA color monitor w/EGA card	$425
Upgrade to enhanced keyboard for XT	$20

COMPONENTS

1200 Baud Modem	$79
2400 Baud Modem	$185
Logitech C7 Mouse	$79
360K Fujitsu Drive	$75
XT Multi I/O	$75
Turbo Motherboard	$85
Monochrome Graphics Card	$55
Enhanced 101 Keyboard	$75
Monochrome Monitor on Swivel Stand	$79
CGA Color Monitor	$275
EGA Color Monitor	$385
EGA Card	$165

286 System A $995

10 MHz
512K RAM
Hard Disk/Floppy Controller
1.2 MB Drive
Monographic Printer Card
Monochrome Monitor on Swivel
Enhanced Keyboard
Parallel Port
Clock/Calendar

286 System B $1759

10 MHz
1024K RAM
Hard Disk/Floppy Controller
1.2 MB Drive
Monographic Printer Card
Monochrome Monitor on Swivel
Enhanced Keyboard
Serial/Parallel Port
40MB Hard Disk
Clock/Calendar

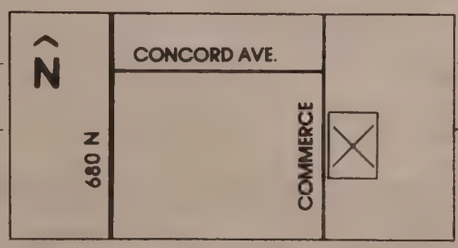
One year warranty on parts & labor on all systems.

Prices subject to change without notice.

DEALER INQUIRIES WELCOME.

2170-R Commerce Avenue, Concord, CA 94520

809-B Texas St., Fairfield, CA 94533



M-F 10:00-6:00 open Sat 10:00-4:00

AT/XT ARE TRADEMARKS OF IBM

You will be very fond of ...

FOND DATA 88 AND 286 !

- RELIABILITY
- TESTED, BURNED-IN
- FCC APPROVED
- COMPATIBILITY
- 1 YEAR WARRANTY

Color: ADD $144.00
EGA: ADD $344.00

***NOTE:**
ALL SYSTEMS PRICES ARE WITHOUT MEMORY CHIPS.

FOND DATA 88
DIAMOND VERSION

MODEL X2F $437.00*

- IBM PC/XT COMPATIBLE
- 8088-1 CPU
- CASE w/RESET, TURBO BUTTONS, KEYLOCK SWITCH, LED INDICATORS FOR POWER, TURBO AND HARD DRIVE
- 150W POWER SUPPLY
- 4.77/10 MHZ MOTHER BOARD WITH 0 K
- KEYTRONIC 101 KEY KEYBOARD
- MONOCHROME CARD W/PRINTER PORT
- FLOPPY DISK CTRL W/CABLE
- 2 FUJITSU 360K FLOPPY DRIVE OR JAPAN MADE EQUIVALENT
- 12" FLAT SCREEN AMBER MONITOR W/T & S BASE
- ASSEMBLED, TESTED, 72 HR BURNED-IN

MODEL XHF $664.00*

- SAME AS ABOVE, EXCEPT:
  - SEAGATE 20M HARD DRIVE W/CTRL
  - 1 FUJITSU 360K FLOPPY DRIVE OR JAPAN MADE EQUIVALENT

FOND DATA 286
DIAMOND VERSION

MODEL A1F $615.00*

- IBM AT COMPATIBLE
- 80286 CPU
- ZERO WAIT STATE AVAILABLE
- CASE W/RESET, TURBO BUTTONS, KEYLOCK SWITCH, LED INDICATORS FOR POWER, TURBO & HARD DRIVE
- 200W POWER SUPPLY
- 6/10 MHZ MOTHER BOARD WITH 0 K
- KEYTRONIC 101 KEY KEYBOARD
- MONOCHROME CARD W/PRINTER PORT
- AT FLOPPY DRIVE CTRL. W/CABLE
- FUJITSU 1.2M, 5¼" FLOPPY DRIVE OR JAPAN MADE EQUIVALENT
- 12" FLAT SCREEN AMBER MONITOR W/TILT & SWIVEL BASE
- 8 EXPANSION SLOTS (6 16-bit; 2 8-bit)
- ASSEMBLED, TESTED, 72 HR BURNED-IN

MODEL AHF $921.00*

- SAME AS ABOVE, EXCEPT:
  - WA2 HARD & FLOPPY DRIVE CTRL
  - SEAGATE 20M HARD DRIVE

IBM AT/XT IS A TRADEMARK OF INTERNATIONAL BUSINESS MACHINE

THESE ARE DEALER PRICES IN QUANTITIES OF 5 OR MORE

New Business Hours:
M-F:7AM-5PM PST
Sat:9AM-3PM PST

JM SYSTEM INC.

1633 W. Washington Blvd. ● Montebello, CA 90640
Tel.:*(213)724-5585* ● *FAX:(213)722-5856*
Dept.MT-888

- Prices & availability subject to change without notice.
- Credit card sales + 3%,$200 min.
- Shipping charges extra.
- 1 year limited warranty.
- $100 minimum order.

MAC @ WORK

IN THIS ISSUE

89 FullWrite Professional: First Impressions
By Mary Eisenhart
First of two parts on Ashton-Tate's integrated word processing environment, which combines unique and powerful features with sometimes-prohibitive memory requirements.

106 HyperCard *By Birrell Walsh*
Sound and graphics tools for the stack designer.

110 BMUG *By David Morgenstern*
BMUG asks: Do you need System 6.0? For tips, bug reports, and other info, see page 110.

114 Macintosh Buyers Guide
Products to support Novell's NetWare, and more.

First Impressions

FullWrite Professional

By Mary Eisenhart

- **Hackers Conference, 1986.** Scott Wiener and Jeff Young of Ann Arbor Softworks, creators of *FullPaint,* let it be known that they're working on something the like of which has never been seen by the Mac-using world.

  At the same conference, Ted Nelson announces that hypertext will become reality in our time.

- **Macworld Expo, January 1987:** Ann Arbor is demonstrating to SRO audiences a revolutionary word processing package, *FullWrite.* It wraps automatically around graphics. It lets you embed hidden notes in the text. It has outlining capabilities. It has features you haven't even imagined yet. What it doesn't have is a ship date, despite national ads singing its praises.

- **Macworld Expo, January 1988:** Demo copies of *FullWrite* are being handed out to all and sundry. Shipment promised Real Soon Now.

- **Spring 1988:** *FullWrite Professional* ships.

FullWrite Professional is possibly the most ballyhooed product ever created for the Macintosh. It's been one of the most notorious vaporware packages in the history of the personal computer. It was also acquired, along with Ann Arbor Softworks, by Ashton-Tate as part of its strategy to obtain market share in the burgeoning Mac business market.

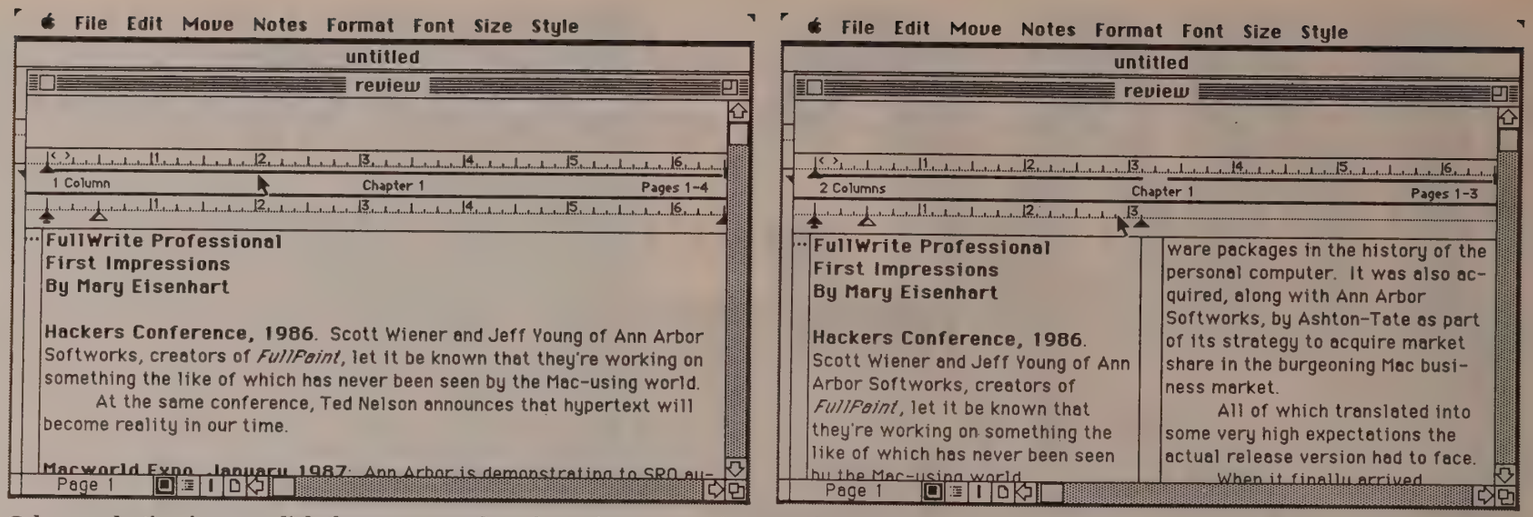
All of which translated into some very high expectations the actual release version had to face.

When it finally arrived, *FullWrite* was a large (three disks, two manuals and the odd reference card here and there), expensive ($395 list) package which billed itself as a complete word processing environment. And, as befits a complete environment, it was also an indisputable memory hog, requiring a minimum of one megabyte just to open.

In its short life, *FullWrite* has acquired some highly vocal detractors and some colorful horror stories. Not unlike Microsoft *Word* 3.0 and *WordPerfect* for the Macintosh, it has a variety of not-necessarily-repeatable bugs ranging from minor annoyances to serious problems.

On the other hand, despite the fact that I'm surrounded by enthusiastic detractors of the package, all of whom have legitimate points, I find myself increasingly won over by *FullWrite,* which is in many ways less an application than a universe to be explored and configured the way I want it — and one which has the grace to hide its myriad of features and options until I ask for them. It's not too farfetched to say that if Ted Nelson, creator of the hypertext universe in which everything is linked to everything else, had devised a word processor, this would be it.

This is the first of a two-part series on *FullWrite.* In next month's installment I'll discuss some of the myriad features in depth; this month's will


File Edit Move Notes Format Font Size Style
untitled
review
1 Column
Chapter 1
Pages 1-4
FullWrite Professional
First Impressions
By Mary Eisenhart
Hackers Conference, 1986. Scott Wiener and Jeff Young of Ann Arbor Softworks, creators of FullPaint, let it be known that they're working on something the like of which has never been seen by the Mac-using world.
At the same conference, Ted Nelson announces that hypertext will become reality in our time.
Page 1
File Edit Move Notes Format Font Size Style
untitled
review
2 Columns
Chapter 1
Pages 1-3
FullWrite Professional
First Impressions
By Mary Eisenhart
Hackers Conference, 1986. Scott Wiener and Jeff Young of Ann Arbor Softworks, creators of FullPaint, let it be known that they're working on something the like of which has never been seen
ware packages in the history of the personal computer. It was also acquired, along with Ann Arbor Softworks, by Ashton-Tate as part of its strategy to acquire market share in the burgeoning Mac business market.
All of which translated into some very high expectations the actual release version had to face.
Page 1

Column selection is easy: click the arrows on the ruler to increase or decrease the number of columns, and FullWrite reformats the text accordingly.

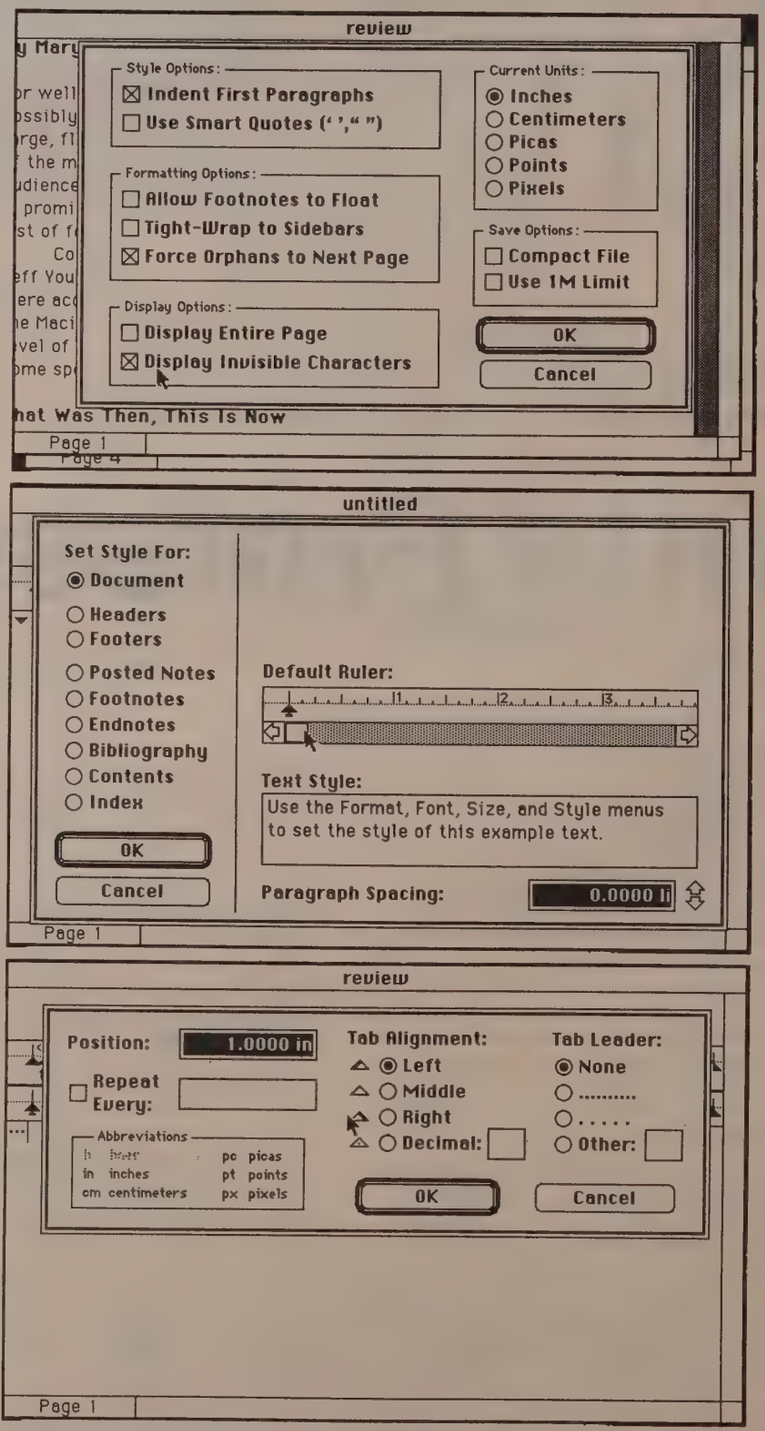
concentrate on general orientation and a few necessary caveats.

First, The Bad News

FullWrite's memory requirements are going to be a serious, perhaps prohibitive, drawback for many Mac users. After running it on a one-meg Plus, a two-meg upgraded 512, and a five-meg Mac II, my own verdict is that its performance is unacceptably sluggish with one megabyte (at least, I consider it unacceptable if a two-page document shows a noticeable lag between keystroke and cursor movement), barely acceptable with two megabytes (text-handling is fast enough, but text-and-graphics documents slow down appreciably), and pretty delightful on the five-meg II — even with MultiFinder and System 6.0.

Also, forget running this application without a hard disk. The program itself takes up a whole diskette, and that's not counting the System, the dictionary, the thesaurus, and all those other files that take up two diskettes.

Leaving aside the issue of the current DRAM crisis, which has sent the price of memory upgrades through the roof through no particular fault of *FullWrite*'s, it is particularly unfortunate that the program is virtually useless on one-megabyte Macs, because conceptually it's very well suited to users who want, essentially, one package for a wide range of word-processing needs. It allows you to configure documents from short notes to large books, legal briefs to academic dissertations, and gives a huge range of formatting and enhancement options. It has the genuine potential to be a self-contained and self-sufficient environment, and a godsend to those who want a variety of great-looking documents without having to learn a word processor, a graphics package and a desktop publishing program. However, it would probably run a whole lot better on those millions of one-meg Macs if you were able to choose your preferences, define your templates, choose your formats — and then discard (or at least store offline) the options you don't want, which currently stick around out of sight but not out of your Mac's mind.



FullWrite imports files from several other word processors easily and transparently.

And Now The Good News

But if you're one of the fortunate users for whom memory isn't a problem, there's a lot to like about *FullWrite*. It's a package a professional writer could love for its features and a neophyte could get started with painlessly. Basic tasks are easy and intuitive, and once you've decided you need to do something it's usually easy enough to find out how; usually you can get the necessary information by exploring the menus, using the extensive online help in the Apple menu, or looking it up in the manual.

Enumerating and discussing all the features and options of *FullWrite* would result in a document longer than the manual. Suffice it to say that *FullWrite*, unlike many applications, doesn't offer a tutorial, aside from what it calls a "tutorial document" which incorporates examples of the options. While this is a little unnerving when you're confronted with the sheer size of *FullWrite*, in practice it's actually a fairly sensible approach. *PageMaker*, for instance, isn't much good to you till you've learned most of the tools. *FullWrite* as it first appears is as simple as *MacWrite* or *WriteNow*, and you can be off and running in no time. (If, however, your needs are likely to be fairly simple into the indefinite future, you should probably save about $300 and buy *MacWrite* or *WriteNow*.)

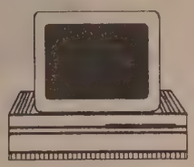
Your Basic Document

FullWrite allows you to have multiple documents open at once, limited

In the Center of Marin There is Now a Center for Computing

Software

MS Word $225
Word Perfect $199
Adobe Illustrator 88.....$450
TOPS $139
Pixel Paint.....$299
Video Work II $139



Hellman's

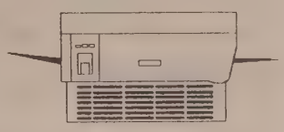
Marin Computer Center

415/453-7924

888 Fourth Street
San Rafael, CA 94901

Upgrades

128 to 512 .....$199
512 to 1 meg $225
512 to 2 megs $550
One meg SIMMs .....$call



Jasmine

We are proud to carry Jasmine's new line of hard drives for the Macintosh. All new drives carry a two-year warranty and feature the finest utility, back-up, and recovery software available today.

Now the most dependable drive on the market is the most affordable

New Location

Come in and see our new store in downtown San Rafael. We are open Monday through Thursday 10 - 7, Friday and Saturday 10 - 5 and Sunday by appointment.

Radius

Two Page Display $1799
Full Page Display Plus/SE $1399
Full Page Display Mac II $1499
Accelerator 16 .....$799
Accelerator 25 .....$1499
Two Page Color .....$call

Why isn't this Mac Smiling?

Maybe it's because of that new system software you installed. Maybe it's because you've been using your Mac too much. Maybe it's gremlins. But the more likely explanation could be the lack of maintenance to the inside of your machine. If you ever chance to see your Mac opened, you'd be surprised how much dust can accumulate in just a few short weeks. Dust that can damage and destroy your floppy drive, your hard drive and the precious data they contain. If the machine contains a fan, you could have up to ten times more dust than the average machine. Add to that the tar and nicotine residue if you smoke.

Another unseen and potential hazard to your Mac is temperature change. Not extreme heat or cold, but the mild temperature changes encountered in everyday use. The ROM and RAM chips are seated in sockets. As these chips heat up and cool down, they tend to unseat themselves. If just one of the pins on these chips fails to make proper contact, you're guaranteed the proverbial "Sad Mac".

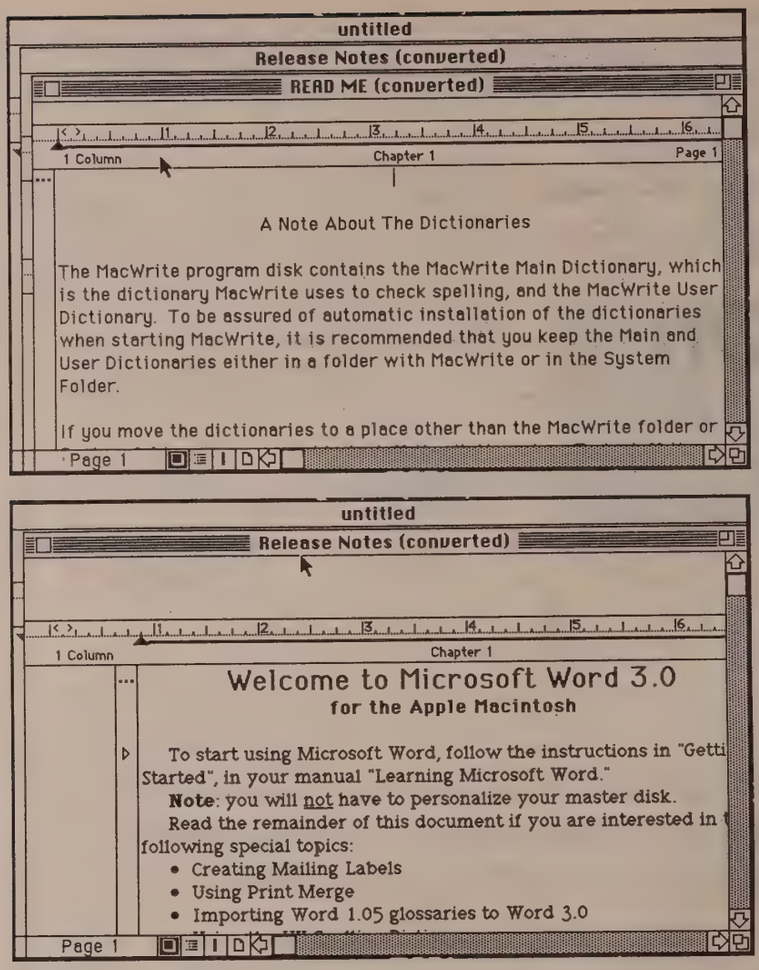
At Hellman's, we pride ourselves in our Service & Repair department. We understand the loss of having a machine that is down. That's why 9 times out of 10 we can diagnose and repair your Mac the same day you bring it in. Even while you wait. We have the best Mac technicians in Northern California and keep a large inventory of spare parts and upgrades. All this adds up to getting you and your machine back to work in the shortest amount of time possible.

So if you ever happen to meet the unhappy little chap above, don't pull your hair out. Give us a call...we're here to help!

Mac Tune Up

- Mouse cleaned • Floppy disk drives cleaned • ROM and RAM reseated • Complete voltage test
  Full diagonstic report • Complete dust removal

$25


untitled
Release Notes (converted)
READ ME (converted)
1 Column
Chapter 1
Page 1
A Note About The Dictionaries
The MacWrite program disk contains the MacWrite Main Dictionary, which is the dictionary MacWrite uses to check spelling, and the MacWrite User Dictionary. To be assured of automatic installation of the dictionaries when starting MacWrite, it is recommended that you keep the Main and User Dictionaries either in a folder with MacWrite or in the System Folder.
If you move the dictionaries to a place other than the MacWrite folder or
Page 1
untitled
Release Notes (converted)
1 Column
Chapter 1
Welcome to Microsoft Word 3.0
for the Apple Macintosh
To start using Microsoft Word, follow the instructions in "Getti
Started", in your manual "Learning Microsoft Word."
Note: you will not have to personalize your master disk.
Read the remainder of this document if you are interested in t
following special topics:
• Creating Mailing Labels
• Using Print Merge
• Importing Word 1.05 glossaries to Word 3.0
Page 1

FullWrite's menus offer a wide range of formatting options.

only by the amount of available memory. It also imports documents quite painlessly from a variety of other word processors — *Word* 1.05, 3.01 and 3.02, *MacWrite* 2.2, 4.5, and 5.0, and, in the PC world, most varieties of Ashton-Tate's *MultiMate*, as well as ASCII files.

FullWrite supports the use of multiple columns in the document. Compared to the likes of *PageMaker*, its method of dealing with this issue is the friendliest I've seen. Upon opening an untitled document, you're presented with the column ruler, which has defaulted to one single column across the page. At the upper left corner of the ruler are ‹ and › characters. Each time you click the › arrow, *FullWrite* adds another column and adjusts the spacing proportionally. (Unlike most desktop publishing programs, however, *FullWrite* does not let you mix the number of columns on a page, though it does offer a Sidebar option which lets you accomplish a limited version of the same thing.)

Tabs are set using a tab ruler and dialog box, which allows you not only to place your tabs and repeat them if desired, but also lets you specify a variety of leaders.

In the File menu, the Preferences option lets you choose hyphenation and spell-checking options, and also whether you'd like the document to be automatically saved at intervals. (Like most self-respecting word processors these days, *FullWrite* also lets you save the document by pressing Command-S.) Doc Layout offers the book author or creator of an academic treatise some options about appendices, bibliographies and notes (which can be placed in a variety of styles and locations). Doc Setup provides more choices of formatting, style and display.

One particularly nice feature is the Get Info option, which is not to be confused with the command of the same name in the Apple system software. *FullWrite*'s Get Info provides you with detailed information on the document you're currently working on, from basics like word count to esoterica like the number of work sessions involved in its creation and its readability in terms of school grade level.

At this level, document creation is as easy as in any of the popular Mac word processors or even some of the better text editor desk accessories. However, this is only the beginning. Next month we'll examine some of *FullWrite*'s more sophisticated options, including notes, outlining and graphics handling. (Ashton-Tate, 20101 Hamilton Avenue, Torrance, CA 90502-1319, 213/329-8000.) □

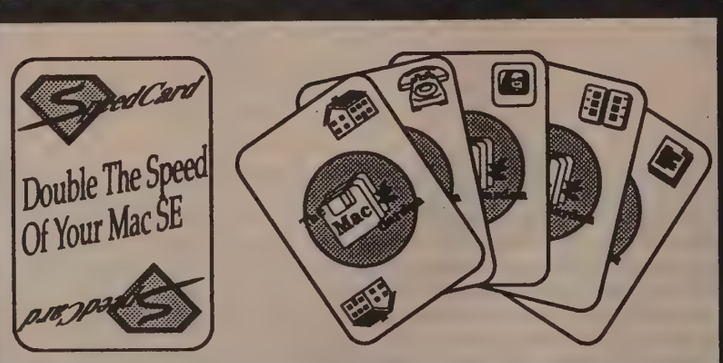
Mac @ Work continues on page 106

The North Bay's Best Macintosh Resource

The Mac Garden
1031 C Street
San Rafael CA 94901
(415) 457-1952

Authorized Dealers Of:
MASS MICRO systems
radius
CMS

USING HYPERCARD ?



Come in and see what the SpeedCard from SuperMac can do for you. It makes using Hypercard faster and more productive.

In Stock !!
Illustrator 88
Cricket Presents
Excel 1.5
PowerPoint 2.0
S.U.M.
Pagemaker 3.0
• • •
Coming !!
Filemaker 4
Xpress 2.0
PixelPaint 1.1
&
SuperLaser
Spool 2.0

The Best In Service • • • Try It First • • • 100's Of Titles In Stock • • • Easy Parking

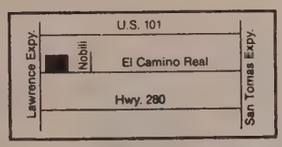
ACCESS COMPUTER TECHNOLOGIES

" A LITTLE BIT BETTER" Exp 8/5/88

CALL US! **247-4444**

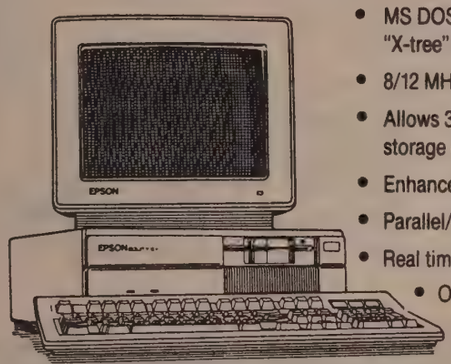
Prices subject to change without prior notice.

3393 EL CAMINO
SANTA CLARA
(BETWEEN LAWRENCE & NOBILI)



SALES & SERVICE
OPEN 7 DAYS
MON-FRI 10-8
SAT- SUN 10-6

EQUITY™ II+



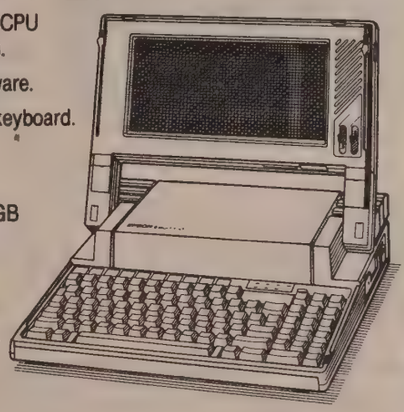
- MS DOS 3.3 with "X-tree" Software.
- 8/12 MHz 80286 AT
- Allows 3 half-height storage devices
- Enhanced Keyboard
- Parallel/Serial Port.
- Real time Clock/Calendar
- One year warranty.

***Small Foot-Print** 640K, 10MHz

EPSON® COMPUTERS NOW AVAILABLE AT YOUR ACCESS

EQUITY LT™ LAPTOP COMPUTER

- Powerful NEC V30 CPU (80% of 286 Speed).
- Free LapLink Software.
- Separate numeric keyboard.
- 2 drive or 20 MB configurations.
- Built-in external RGB videoport.
- MS DOS 3.2 with "X-tree" Software.
- One year warranty.



AMDEK 732 VGA Monitor **$439**

intel 80387-16 **$489** 80387-20 **$729**

NEC P7 PRINTER w/Tractor **$649**

Wordstar 2000 Plus Release III **$225** After Rebate

Monitors/Graphics

GENOA SUPER VGA	$269
PARADISE VGA	269
VEGA VGA	269
EVEREX VGA	249
NEC MVA1024X768	829
GENOA Super EGA HI-RES+	189
EVEREX 800X600	169
PARADISE EGA480	179
ATI EGA WONDER	189
EVEREX EGA480	139
NEC MULTISYNC XL 19"	1999
NEC MULTISYNC PLUS	899
NEC MULTISYNC II	565
NEC MULTISYNC GS	229
SONY MULTISCAN 1302A	649
SONY MULTISCAN 1303	535
MITSUBISHI DIAMONDSCAN	529
IMTEC MULTISYNC	439
CASPER EGA MONITOR	349
SAMSUNG RGB COLOR	225
SAMSUNG HI-RES MONOCHROME	75

EVEREX PRODUCT

AT EMS 10MB	149
PS/2 EMS 4MB	289
AT EMS 3MB	99
XT EMS 2MB	79
MODEM 1200BPS Int	69
2400BPS MODEM INT/EXT	149/199
POCKET MODEM	129
4800 BPS FAX MODEM	359

SOFTWARE

SIDEKICK PLUS	$129
M.S. QUICK C	69
PARADOX 2.0	399
Q&A	189
DRAFIX	199
PAGE PERFECT	279

Free "DOS Step by Step" with Systems

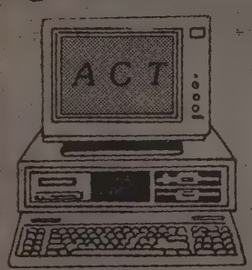
The most Powerful 20 MHz 80386

20 MHz Hi-Speed with EGA 640x480 on Board
1 MB RAM On Board expandable to 2MB
2 parallel and 2 serial ports on Board
Western Digital WAII, Floppy & Hard Disk Controller
Teac, 1.2MB Floppy Drive
80387 & 80287 Sockets on Board
Keytronics Enhanced Keyboard

Landmark=26.7
Norton Si=22

New $2222

High Performance 16 MHz 80286 0 Wait State



- Western Digital WA2 Controller
- Teac 1.2 MB Floppy Drive
- 512K Memory Expandable to 1MB
- AT Style Keyboard
- Mono Graphic Card with Printer Port
- Mono Monitor
- 1 Year Warranty

New $1129

12 MHz Complete System
0 Wait State **$999**

10 MHz Complete System
0 Wait State **$899**

8 MHz 8088-2 Mono System Turbo-8

- Teac 360K Drive
- 256K Memory
- AT Style Keyboard
- MGP Card
- Mono Monitor
- 1 Year Warranty

$469

Seagate

20 MB w/Controller	$259
30 MB w/RLL Controller	289
40 MB ST 251 38ms	388
40 MB ST 251-1 28ms	488
40 MB ST 4053 28ms	488
60 MB ST 277 RLL 38ms	488
80 MB ST 4096 28ms	629

All Drives Come with Software

intel Inboard 386 with 1 MB Ram! . . $895
Above Board 286 with 512K Ram 399

Everex Tape Backup

Teac 40 MB Int/Ext	$495/585
Teac 60 MB Int/Ext	539/629
Archive 60 MB Ext	649
Wangtec 60MB Int/Ext.	689/789
Archive 40 MB Int.	349

All Printers on Sale

EPSON

Free Printer Cable with Epson

LX800	$199
FX850	379
FX286e	399
EX800 300CPS	429
EX1000	549
LQ500 24-PIN	349
LQ850 24-PIN	559
LQ1050 24-PIN, 132 COL	779
LQ2500 24-PIN, 132 COL.	829

Panasonic

KX-1091i M2	$219
KX-1092i	329
KX-1524 24-PIN. 132 COL.	549

FUJITSU **DL3400** 24 pin. 132 col. **$599**
Color Option

NEC **P2200** 24 Pin Tractor Incl. **$339**

star micronics NX-1000 **Color $269**

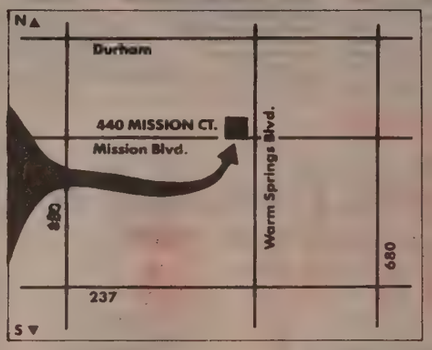
LaserJet series II
HEWLETT PACKARD
Cash & Carry **$1665**

Fry's Electronics

541 Lakeside Drive
Sunnyvale
(408) 733-1770

440 Mission Ct.
Fremont
(415) 770-FRYS

HOURS
MON-FRI
8 am-9 pm
Sat & Sun
9 am-6 pm
Visa
Mastercard
Welcome
Limit
Rights Reserved



GRAND OPENING SALE-A-BRATION!

AUDIO VIDEO
VCRs • Camcorders
Nintendo • CD Players
High Res TV Monitors
Large Screen Televisions
Telephones & Answering Machines
Calculators • Stereo Componentents Systems
& Speakers

COMPUTER HARDWARE & SOFTWARE
All Major Computer Hardware and Software Brands!!!
Accessory Items to Supply Your Every Computer Need and
More! A Complete Selection of Technical and Training Books.
All Computers, Monitors & Printers Are On Display.
SEE FOR YOURSELF!

ELECTRONIC COMPONENTS
Over 5,000 Different Electronic Components, ICs, Memory Microproces-
sors, TTL, Fast, HCT, 10KH, CMOS, LS, ALS, AS, S, ECL, Linear, Discretes,
Resistors, Sockets, Connectors, Crystals, Oscillators, A Vast Assortment
of Tools & Accessories For The Electronic Professional And Enthusiast.
FACTORY FRESH. 100% GUARANTEED

CONVENIENCE
FAST ONE-STOP SHOPPING
A Wide Selection of Magazines, Soft Drinks, Snacks,
Candy, Health and Beauty items, Stationary and
Office Supplies, with all the leading brands on
all the most used and wanted products for
your everyday needs.

7 DAY SERVICE
• PC/XT/AT/386 Systems
• Diagnostics & Repair
• EPSON Warranty
& Repair
• Installation

Over 10,000 electronic items at ultra low prices

Come By and Join In The Celebration at

Fry's Electronics

"The Choice of A New Generation Of Electronic Shoppers"

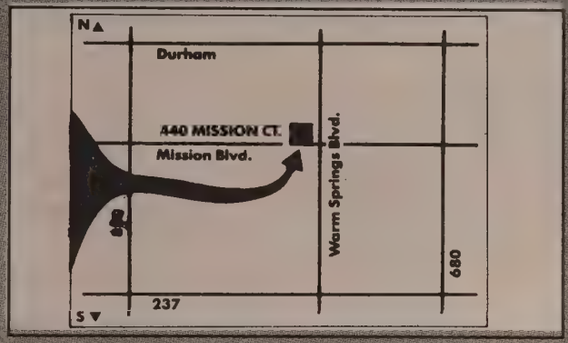
COME CELEBRATE WITH US IN SILICON VALLEY TOO!!

HOME OF FAST, CONVENIENT, COURTEOUS SERVICE

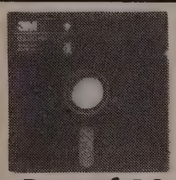
Fry's ELECTRONICS

541 Lakeside Dr.
Sunnyvale
(408) 733-1770

440 Mission Ct.
Fremont
(415) 770-FRYS



HOURS:
Mon.-Fri.
8 am - 9 pm,
Sat. 9 - 6
OPEN EVERY SUNDAY 9 - 6
VISA, MASTERCARD WELCOME



Box of 10

3M 5 1/4" DS, DD DISKETTES $6.49

AMAX TURBO XT MONO SYSTEM $499

- 4.77/8 MHz 8088-2
- 256K RAM Expandable to 640 on Motherboard
- 360K Floppy Disk
- Hi-Res Monographics
- Printer Card
- Mono Monitor

Seagate ST-225 20 MB XT HARD DISK $259

30MB Mac HARD DISK $599
External Mac Drive

NEC P2200 24 PIN PRINTER
170 CPS Draft . 55 CPS NLQ
Tractor Feed
$349

MSC PC MOUSE $88

- Serial Version
- Hi-Res Optical Mouse w/Pad
- FREE PC Paintbrush Software

IBM PC/XT/AT PRINTER CABLE $3.95
6 Foot

3.5" or 5 1/4" DISK FILE 50 $7.95
Holds 50 Diskettes

TALL TREE SYSTEMS J. LASER

OVER $30,000 IN PRIZES .....

TO BE GIVEN AWAY AT OUR NEW FREMONT STORE FROM 7/8/88 TO 7/16/88

BLUE CHIP COMPUTER

BOCA COMPUTER ACCESSORIES CORPORATION P-15

Panasonic MODEL 2700 OMNIVISION VCR

GRAND PRIZE
HYUNDAI AUTOMOBILE

GRAND PRIZE TO BE DRAWN SAT. 7/16/88 AT 2PM IN FREMONT DRAWINGS TO BE HELD HOURLY FOR OTHER PRIZES. NO PURCHASE NECESSARY. WINNERS NEED NOT BE PRESENT TO WIN . THE EMPLOYEES OF FRY'S ELECTRONICS, IT'S AFFILIATES, AGENTS & MEMBERS OF THEIR FAMILIES ARE NOT ELIGIBLE.

intel ABOVE BOARD 286 & MATH COPROCESSOR

CITIZEN 120 PRINTER

ALLISON Mini-Power Speaker System

Traveling Software Laplink Software

TEKNIKA 26" STEREO UNIVERSAL REMOTE

BOCA RESEARCH INC BOCARAM EMS OK RAM CARD

PRACTICAL PERIPHERALS 2400 BAUD

T-100 TOSHIBA LAPTOP COMPUTER

Generic 3D CAD SOFTWARE

THE COMPLETE PC PC HAND SCANNER

Seagate ST-4096 82MB HARD DISK

ok Solder Desolder Station

MICRODOT 386 & 286 UNIX

SONY 27" TV Kv27 HFR MTS with Surround Sound

Microsoft SOFTWARE SET

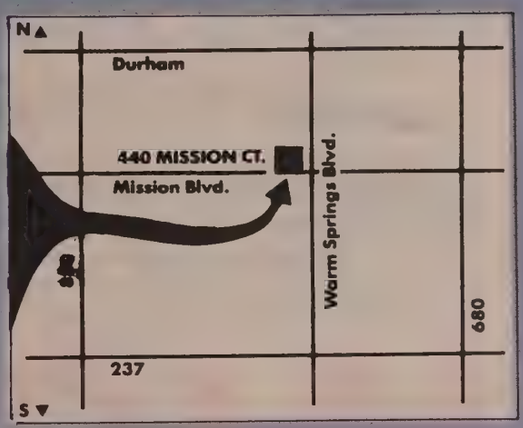
AT&T CORDLESS 5200 PHONE

VIDEO SEVEN VEGA VGA

BORLAND TURBO SOFTWARE SET

Come
GRAND OPENIN
At Our Nev
HOURS
MON-FRI
8 am-9 pm
Sat & Sun
9 am-6 pm
Visa
Mastercard
Welcome
Limit
Rights Reserved
ELECTRONICS
fry's
THE CHOICE OF A NEW GENERA
NOW OPEN IN FREMONT . . . . . Y

oin In Our
G SALE-A-BRATION
Second Store



ION OF ELECTRONIC SHOPPERS

Won't Believe Your Eyes!!!

Fry's ELECTRONICS

541 Lakeside Drive
Sunnyvale
(408) 733-1770

440 Mission Ct.
Fremont
(415) 770-FRYS

Prices Good Through August 9, 1988

GET THE HI-TECH ADVANTAGE WITH A TeleVideo® 386.....

Mono System

- 0 wait State 16 MHz 80386
- ***2 MB of 80 ns RAM***
- 1.2 MB Floppy Disk
- Serial/Parallel Ports
- Clock/Calendar
- 80387 Socket
- Hi-Res Monographics
- Mono Monitor

FREE! One Year On-Site Warranty on Base Unit!

$2795

COMPAQ DESKPRO 386

40 MB MONO SYSTEM

- 16 MHz 80386
- 5 1/4" Floppy Drive
- 1MB RAM
- 40 MB Hard Disk
- Serial/Parallel Ports
- Clock/Calendar
- Hi-Res Monographics
- Mono Monitor

$4695

AMAX 386 Mono System

- 16MHz 80386 O Wait State
- 5 1/4" 1.2 MB Floppy Disk
- 1 MB RAM Expandable to 2 MB on Board
- Hi-Res Monographics Printer Card
- Mono Monitor
- Clock/Calendar

$2395

CARRY OFF THESE LAPTOP SPECIALS

COMPAQ® Portable III

20 MB LAPTOP COMPUTER

- 12 MHz 80286
- 640K RAM Expandable to 6.6 MB RAM
- 5 1/4" Floppy Disk
- 20 MB Hard Disk
- Serial/Parallel Ports
- Amber Plasma 80 x 25 line Display
- Full Size Keyboard

$3695

ZENITH data systems SUPERSPORT

- 8 MHz 80C88
- 640 RAM expandable to 1.64 MB EMS Memory
- 2 3.5" 720K Floppies
- Serial/Parallel/RGB Ports
- 10.5" Electroluminiscent BacklitSuper Twist Screen
- MS DOS 3.21

$1788

TOSHIBA T5100 Portable 386 PC

The Ultimate Laptop

- Desktop Power In A Compact 15 Lb. Package Thats Just 12"W x 3.5"H x 14.2"D
- 80386 CPU at 16MHz
- 80387 Co-processor socket
- 40 MB Hard Disk
- 1.44 MB 31/2" Floppy Drive

$5195

Try These Enhancements To Complete Your PC

EPSON®

LX-800

- 180 CPS Draft
- 25 CPS NLQ
- 80 Column
- Tractorfeed

$199

THE COMPLETE PC

COMPLETE COMMUNICATIONS FOR YOUR PC !

HAND SCANNER

Captures Real World Graphics in 200 DPI by 2 1/2" Wide Image

$199

VOICE MAIL

Answers Your Phone! Forwards Your Messages! Has Multiple Voice Mailboxes. Remote Access

$299

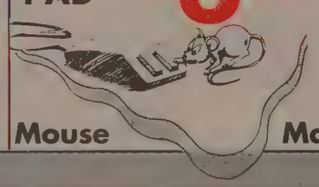
FAX CARD

- Autodial • Polling
- Delayed Transmission.
- Broadcasting.

All in Background! Word Processing To FAX Conversion

$399

WAVE PAD $6.95



Mouse Mat

7 Day Service

- Hard Disk Installation
- EPSON Printer Repair
- Novell Network Configuration
- PC/XT/AT/386 System Diagnostics

AVAILABLE 7 DAYS A WEEK

AST RESEARCH INC.

TurboLaser/PS

Adobe PostScript

- 3 MB RAM
- 12.5 MHz 6800
- Apple Talk RS2332C & Parallel Port Can Be Connected to IBM, Apple & DEC Computer Equipment
- 8 Pages/Minute
- 35 Residental Fonts
- 300 DPI Resolution

$3795

The Cost-Effective High Speed Solution

PARTNERS IN PERFORMANCE

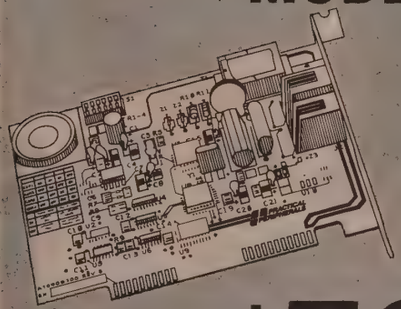
HOME OF FAST, CONVENIENT, COURTEOUS SERVICE

Fry's ELECTRONICS & **PRACTICAL PERIPHERALS®**

541 Lakeside Drive
Sunnyvale
(408) 733-1770

440 Mission Ct.
Fremont
(415) 770-FRYS

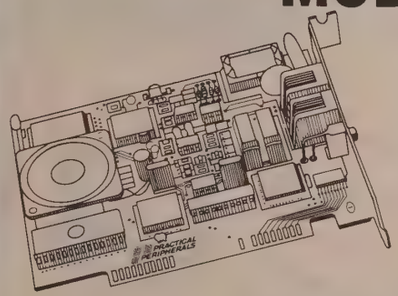
INTERNAL 1200B MODEM



100% Hayes Compatible
Pop Down Auto-Dialer & Pro Comm Software

$59.95

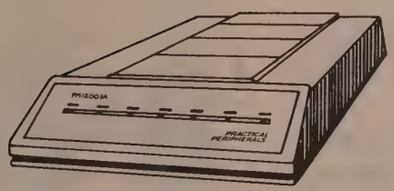
INTERNAL 2400B MODEM



100% Hayes Compatible
Auto Adaptive Equalization for Error-Free Transmission
Pro Comm Software

$149.95

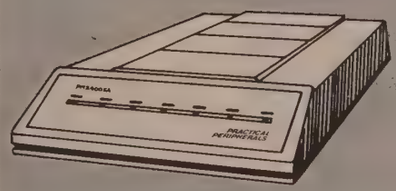
EXTERNAL 1200 BAUD MODEM



Hayes Compatible with EEPROM Allows 10 User Telephone Numbers and Menu Set-Up

$109.95

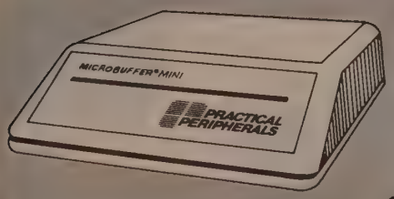
EXTERNAL 2400 BAUD MODEM



100% Hayes Compatible
High Speed Data Transmission for Lower Phone Rates

$179.95

MICROBUFFER MINI



32K expandable to 512K RAM
Compact Stand-Alone Printer Buffer

Available in:
Serial to Parallel
Parallel to Parallel
Parallel to Serial

$69.95

MADE IN U.S.A.
PRACTICAL PERIPHERALS
5 YEAR GUARANTEE
FACTORY REPAIR OR REPLACEMENT

PERFORMANCE

FEATURES

VALUE

PROUDLY MADE IN THE U.S.A.

Fry's Electronics

541 Lakeside Drive
Sunnyvale
(408) 733-1770

440 Mission Ct.
Fremont
(415) 770-FRYS

MEMOREX
CP8 UNIVERSAL REMOTE CONTROL
- Combines All Your Current Remote Controls
- Into 1 (Up to 8)
- 24 Different Sequence Programs With Up To
- 48 Commands Each

$98

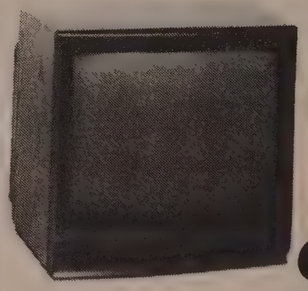
SONY
REMOTE CONTROL CD PLAYER
COMPACT disc DIGITAL AUDIO

- Unilinear Converter™
- with Digital Filter
- Exclusive Error
- Prediction Logic
- 20 Key Direct Access™
- Remote Control
- 4 Repeat Modes
- Music Calendar Display

SONY Repacks-
Full Warranty

$149

TEKNIKA
26" MTS STEREO T.V.
With Universal Remote Control



- Remote Control Operates Most Manufactured VCR's
- 152 Channel Quartz Synthesized Tuner
- Two Full-Range Matched Speakers

2 YEAR IN HOME WARRANTY

$398

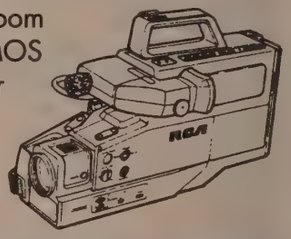
Scotch™ EG T-120
VIDEO CASSETTE TAPE
$2.79

Symphonic 5300

HQ VHS VCR
Wireless Remote • Cable Ready
- 6 Event/14 Day Timer
- 110 Channel Cable Ready Digital Tuner
- Auto Power On/Off
- Auto Rewind /Auto Eject

$169

RCA FULL SIZE VHS CAMCORDER
AUTO FOCUS
- 6:1 Power Zoom
- Solid State MOS
- Image Sensor
- High Speed
- Shutter
- On Screen Date
- Display



Model CPR-250

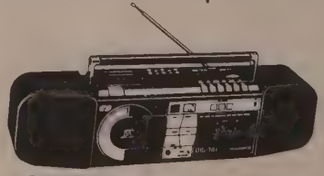
$897
With Hard Case

SONY Walkman
SONY'S MOST AFFORDABLE AM/FM CASSETTE PLAYER
- AM/FM Stereo Tuner
- Local/Distant Sensibility Switch
- Stereo Tape Playback
- Comfortable MDR Stereo Headphones

Model WM-F41

$29

MAGNAVOX COMPACT disc DIGITAL AUDIO
PORTABLE CD BOOMBOX
Compact Disc Radio
- 3.5 Watts Per Channel Output
- Stereo Cassette Deck
- CD to Cassette Dubbing
- 2-Way Speaker System



$189

SONY DT-3 DISCMAN
PORTABLE AM/FM CD PLAYER
- Supplied Rechargeable Battery
- Automatic Music Sensor (AMS)
- Shuffle Play Plus Disc
- Repeat Modes
- Auto Tracking Recovery
- Unilinear Converter® with Digital Filter

$188

SPECTACULAR SPECIALS

FRY'S ELECTRONICS

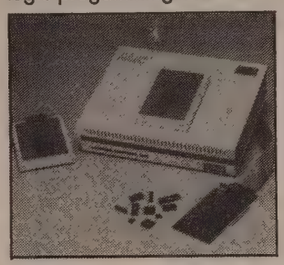
541 Lakeside Drive
Sunnyvale
(408) 733-1770

440 Mission Ct.
Fremont
(415) 770-FRYS

SOFTWARE DRIVEN DEVICE PROGRAM WORK STATION

Logical Devices

ALLPRO is a software expandable device programming workstation that keeps pace with the rapidly increasing programmable device market. A unique hardware/software architecture enables ALLPRO to easily grow in support and engineering software design capabilities as your device library increases. Intergrated with an IBM PC via high-speed parallel interface. ALLPRO becomes a total firmware and logic progamming center.



Reg $3995

$3495

ALLPRO

- IBM PC based device programming workstation
- Programs PALS, PLDs, PROMS, EE/EPROMS, MICROS
- Rapid upgrades can be accomplished in the field via floppy disc or modem transmission
- Self-subsistent device support-no additional active modules or plug-ins required
- An ever-increasing Device Library
- Software driven pin drivers
- CAD/CAE workstation software support for PLDs
- Up to four programmers can be clustered toone IBM PC
- Ergonomic engineering for ease of use
- Near unlimited device programming versatility
- 2 year library subsription
- Component test optional software purchase (logicm devices)
- Integrated optional PLD compiler

SUPPORTED DATA FORMATS

- INTEL Hex 80.86
- Motorola Hex S1, S2,S3
- EDEC
- Binary Hex
- Custom
- TEK Hex
- TI Hex

PORTABLE-SOLDERING IRON

$19.99

BUTANE
Inter-changeable TIPS
Adjustable w/10-60 W
Power Average
60 Min Per Refill

2764A-250

$3.99

27C256-250

$3.99

27C128-250

$5.49

1 MEG SIMM MODULE 100 N.S.

1 MEGx9 TOSHIBA **$549**

256Kx4-100 N.S.

$47.95

80387-16

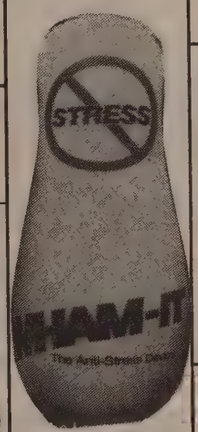
intel® Math Coprocessor

$495

20 MHz $759

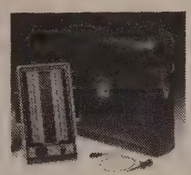
72" INDUSTRIAL SIZE

ANTI STRESS DEVICE



$34.95

CABLETRACKER DATATRAN CT-50



The **Cabletracker** allows you to determine continuity. Intermittent connections, short circuits and crossed wires on nearly any cable used in voice or data communications installations. PROVIDES the means to test 25-pair telephone cable or any cable of 50 or fewer conductors. Supplied with each unit is an 18-inch clip lead, a 4-foot 50 conductor extension cable, a deluxe padded carrying case and a comprehensive guide to operations.

$269

intel MATH COPROCESSOR

PC/XT		AT
8087		80287
$95	5/6 MHz	$179
$149	8 MHz	$249
$199	10 MHz	$299

1988 3 Vol IC MASTER

$119

PALM ERASE

Logical Devices

$49.95

Industry's smallest UV EPROM eraser, Designed for field service & engineering applications where space ia at a premium. It's extremely fast & can erase in less than 3 minutes. A small tray can accommodate a single 24 or 28 pin EPROM at a time Avg. bulb life 3000 hours

CHEMICALS

IN STOCK
WIDE VARIETY
LARGE QUANTITIES

or

FRY's WILL MATCH ANY AUTHORIZED

TECH SPRAY

Chemtronics

DEALER'S PRICE IN TOWN!!

5% CASE DISCOUNT

10% 5-10 CASES

15% 10 CASES & UP

SMD REMOVAL SYSTEM

VARIABLE TEMPERATURE CONTROLLED

Tweezer Action Handpiece
Handpiece Stand
Wide Variety of Optional Tips

SMT-W3
Tips are designed w/high thermal capacity to support removal of the most demanding components.

$419

HOME OF FAST, CONVENIENT COURTEOUS SERVICE

Fry's ELECTRONICS

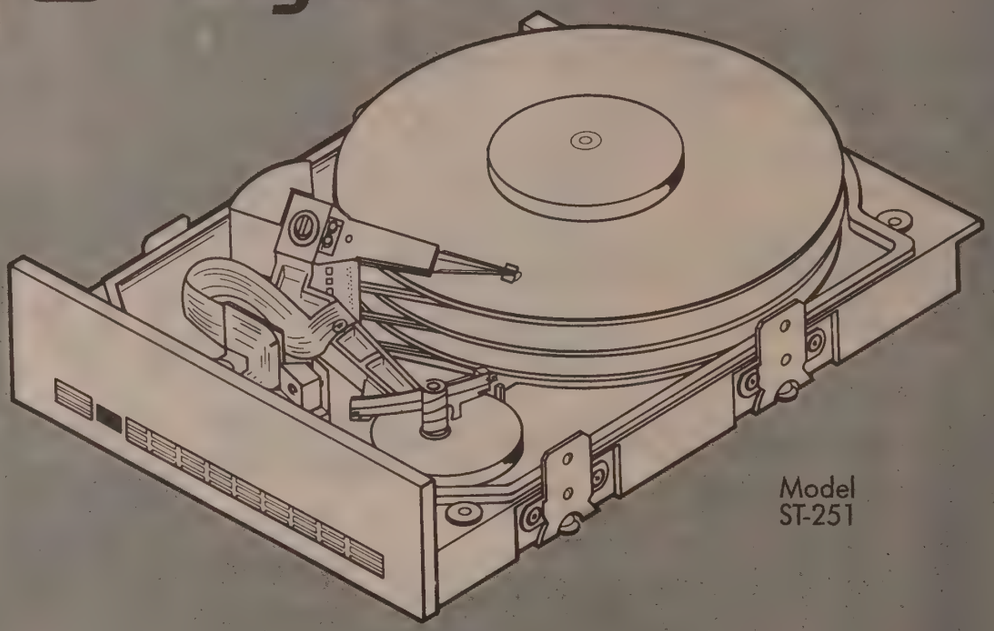
541 Lakeside Drive
Sunnyvale
(408) 733-1770

440 Mission Ct.
Fremont
(415) 770-FRYS

The First Place To Look For The First Name In Drives . . . .

Seagate

You Will Find Seagate 5¼" Hard Disc Drives In More Than 6 Million Small Computers & Systems. You'll Also Find Them At Fry's At Everyday Low Prices!



Model ST-251

Seagate Drives Are Built With Consistent Quality To Ensure Exceptional Performance In Every Drive.

★ ★ ★ Seagate STAR SELLERS ★ ★ ★

20 MB KIT
ST-225
63 ms Drive
Controller
Cable Set
$249

30 MB KIT
ST-238
63 ms Drive
RLL Controller
Cable Set
$288

40 MB DRIVE
ST-251-1
28 ms Drive
1/2 Ht. Size
Low Power
$488

40 MB DRIVE
ST-251
39 ms Drive
1/2 Ht. Size
Low Power
$388

20 MB DRIVE
ST-125
39 ms Drive
1/2 Ht. Size
For AT's
$277

82 MB DRIVE
ST-4096
29 ms Drive
Full Height
For AT's
$688

NOW HIRING FOR OUR NEW FREMONT STORE OPEN NOW!!

WE HAVE A JOB FOR YOU!

Fry's Electronics Is A Fast-paced Retail Electronics Store Featuring Personal Computers, Peripherals, Software, Computer & Component Accessories, IC's, VCR's, Audio Components and A Full Service and Repair Department.

We Are An Innovative Marketeer With A Broad Selection Of Leading Edge Products For The Electronics Industry. Our Continued Growth Is Creating Opportunities For:

COMPUTER SALES

SERVICE TECHNICIAN

COMPONENT SALES

AUDIO/VIDEO SALES

CASHIERS

HOME OF FAST, CONVENIENT, COURTEOUS SERVICE

FRY'S ELECTRONICS

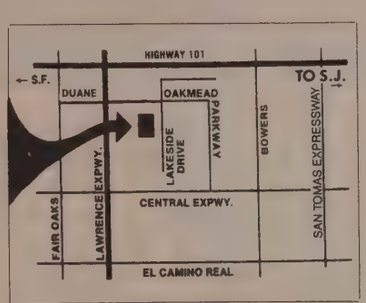
541 Lakeside Dr.
Sunnyvale
(408) 733-1770

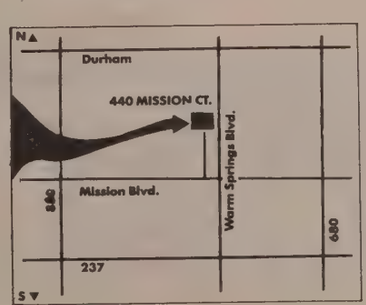
440 Mission Ct.
Fremont
(415) 770-FRYS

APPLY NOW

CALL (408) 733-1770 or (415) 770-FRYS

SUNNYVALE **FREMONT**



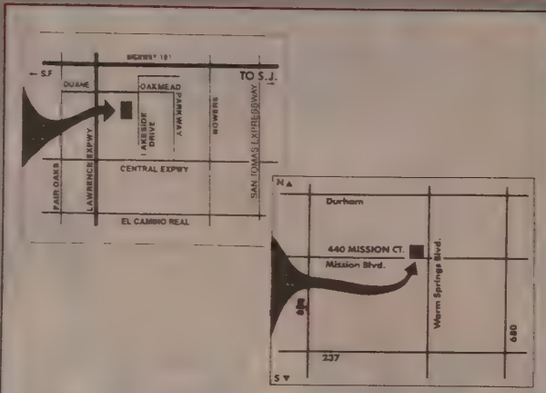


HOME OF FAST, CONVENIENT, COURTEOUS SERVICE

Fry's ELECTRONICS

541 Lakeside Dr.
Sunnyvale
(408) 733-1770

440 Mission Ct.
Fremont
(415) 770-FRYS



Prices Good Through August 9, 1988

HOURS:
Mon.— Fri.
8 am-9 pm,
Sat. 9-6,
Open Every Sunday 9-6
VISA,
MASTERCARD
WELCOME
Limit Rights Reserved

AMAX TURBO XT MONO SYSTEM

4.77/8 MHz 8088-2
256K RAM Expandable to 640K on Motherboard
360K Floppy Disk
Hi-Res Monographics
Printer Card
Mono Monitor

$499

BLUE CHIP ELECTRONICS 6/10 MHz 80286 MONO SYSTEM

- 512K RAM Expandable to 2 MB on Motherboard
- 5¼" 1.2 MB Floppy Disk
- 2 Serial Ports
- 2 Parallel Ports
- Clock/Calendar
- Hi-Res Monographics Card
- Mono Monitor

$949

EPSON EQUITY II+

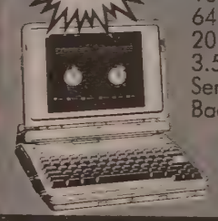
8/12 MHz MONO SYSTEM

- 640K RAM
- 5¼" 1.2 MB Floppy Disk
- Serial/Parallel Ports
- Clock/Calendar
- Hi-Res Monographics
- Mono Monitor
- MS/DOS 3.2
- GW Basic

$1349

ZENITH data systems Z-183 LAPTOP PC

Rechargable Battery Lasts For Hours



16 Bit 4.77/8 MHz 80C88
640K RAM 64K ROM
20 MB Hard Disk
3.5" 720K Floppy Disk
Serial/Parallel/RGB Ports
Backlit Supertwist LCD Screen

$1999

COMPAQ 12 MHz DESKPRO 286 MONO SYSTEM

- 12 MHz 80286
- 256K RAM Expandable to 2MB
- 1.2 MB Floppy Disk
- Serial/Parallel Ports
- Clock/Calendar
- Hi Res Monographics
- Mono Monitor

$1795

Seagate ST-125 20 MB HARD DISK DRIVE

FAST!
HALF-HEIGHT
39 ms ACCESS

$279

Seagate ST-251 40 MB HARD DISK DRIVE

40 MB
AT DRIVE
39 ms ACCESS

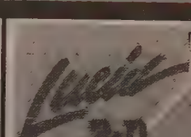
$388

intel 286 ABOVE BOARD

512K RAM Expandable to 40 MB EMS RAM w/Piggyback
Runs up to 12.5 MHz

$399

Lucid 3-D 3-D Spread sheet



90K Memory Resident
Multiple Windows
Pop-Up Menus
Cut & Paste From One Spreadsheet To Another

$99.95

1200 BAUD 1/2 CARD MODEM

Internal Card
by CPI
Hayes Compatible

$59.95

2400 BAUD 1/2 CARD MODEM

Internal Card
Hayes Compat.
By Packard Bell

$139.9

MS DOS GW BASIC

$59.95

JETWARE JET FONT CARTRIDGES

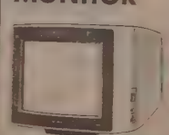
EZ$ EZ$
Qq@eQq@o
Bg2 Bg2

100% Functionally Identical to HP • Improved Text Appearance
Improved Character Consistency • Improved Typographic Accuracy

1,2,3 Spreadsheets . . $219
Helvetica & Times Roman G
14.4 pt Bold. $199

SONY MULTISCAN EGA/VGA MONITOR

800x600
.26 Dot Pitch
Model 1302



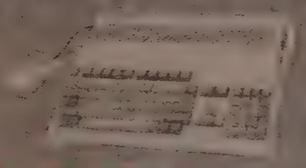
$649

MONITERM VIKING 1 MAC 19" MONO MONITO

Macworld's Best!
1280x960 1:1 Aspect Ra

$1595

COMMODORE AMIGA 500



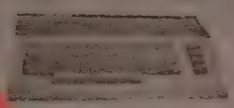
- .68000 CPU 7.16 MHz
- 512K RAM Expandable to 1MB with card
- 256K ROM
- Serial/Parallel/RGB Internal Ports
- Right & Left Audio & Sound Channels
- Optomechanical Mouse
- Built-in 3.5" 880K Floppy Disk Drive
- Amiga Basic-Multi-Tasking Operating System

$599

Amiga 2000 in Stock Now!

COMMODORE 64C™

World's Most Popular Computer



- 64K RAM
- 20K ROM
- 6510A Microprocessor Compatible With 6502
- GEOS-Graphics Environment Operating System
- Serial/Parallel Ports
- 2 Joystick Ports

$179

Commodore 128D in Stock Now!

APPLE MACINTOSH SE

30 MB HARD DISK

- 1 MB RAM
- 800K Floppy Disk
- 30 MB Internal Hard Disk
- Serial/SCSI Ports
- Mouse
- Apple Keyboard

$2795

IBM PS/2 MODEL 60

44 MB VGA SYSTEM

- 10 MHz 80286
- 1 MB RAM Expandable to 15 MB
- 3.5" 1.44 MB Floppy Disk
- 44 MB Hard Disk
- Floor Standing Unit
- Serial/Parallel Ports
- Clock/Calendar
- Packard Bell VGA Monitor

$3595

BM PS/2 MODEL 25

MONO SYSTEM

- 8 MHz 8086 0 Wait State
- 512K RAM Expandable to 640K on Motherboard
- 720K 3.5" Floppy Disk
- Clock/Calendar
- Mono Monitor
- Detachable Keyboard

$899

HYUNDAI

SUPER-16T

MDA/MGA/CGA SYSTEM

- 4.77/8 MHz-80 Turbo Processor
- 640K RAM
- .6 Expansion Slots
- 360K Floppy Disk
- Serial/Parallel Ports
- Clock/Calendar
- MS DOS 3.2 GW BASIC 3.2
- Mono Monitor
- MDA/MGA/CGA Graphics

$699

Kodak 3.5" 2S/2D DISKETTES

Box of 10

$15.95

ATi EGAWONDER

EGA/CGA/HERCULES

Any Software!!
Any Monitor!!
Any Time!!

- —640x480
- —16 Colors
- —Auto Mode Switch
- 2 Year Warranty

$179

NEC P2200

24 PIN PRINTER

170 CPS Draft
55 CPS NLQ
Tractor Feed

$349

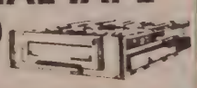
SUPERMAC TECHNOLOGY

DATAFRAME 60 XP

60 MB High Performance RLL SCSI Hard Disk For Mac Plus/SE/II

$1099

IRWIN 20 MB INTERNAL TAPE BACKUP



Auto-Backup
On Line Help
Network Compatible
500 KBPS
IBM AT Compat

$349

30 MB MAC HARD DISK

External, Fast, Reliable

$599

COLORVUE

MAC SE COLOR CARD
640x480 in 16 Colors

$495

DESIGNER VGA

VGA/EGA CARD
Compatible to the Register Level
640x480 in 256 Colors

$349

JETWARE

$329

***Jet* MEMORY 1 MB STARTER**

- Plugs into Laser Jet II for 1.5 MB Total Memory
- Functionally identical to and compatible with HP 1 MB Memory Card
- Recommended for single users with small amounts of font and graphics use
- Built-in expansion capability reduces memory upgrade costs
- State-of-the-art surface mount components for maximum capacity minimum size and higher reliability
- Complete installation instructions and diagram
- Full 2 year warranty

BY BIRRELL WALSH

Editing Sound And Icons

I got a chance to talk to Jan Lewis at the HyperExpo and StackMart in June. She and her cohorts expected a lot of attention for her *HyperAge* magazine among devoted computer people, but they've been surprised and pleased that the corporate community also is very interested.

It makes sense, doesn't it? A complete graphic/sound/animation tool, a database, a front end for any application, a prototyping tool, and all for $49. A few of the savvier corporations have finished rubbing their disbelieving eyes and grabbed *HyperCard*. Expect a stampede soon for three major applications:

- In-House Training
- Presentations
- Prototyping of software systems for the VAX/Mac partnership

This suggests excellent employment opportunities for people who can add "*HyperCard* Programming" to their resumes. Interested? Read on.

There's a lot to making a polished *HyperCard* application. We can use all the help anyone will offer us. *Icon Factory* allows you to edit icons. MacRecorder lets you record and edit sound. *MacGallery*, an extensive clip art collection, provides you with an assortment of artwork to include in your stacks.

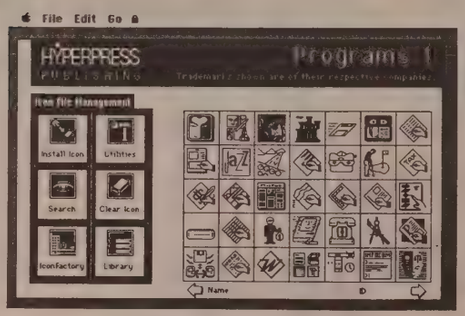
MacRecorder

Sometimes you wonder how people can sell products as cheaply as they do. Farallon Computing has released MacRecorder, an amazing sound system for $200.

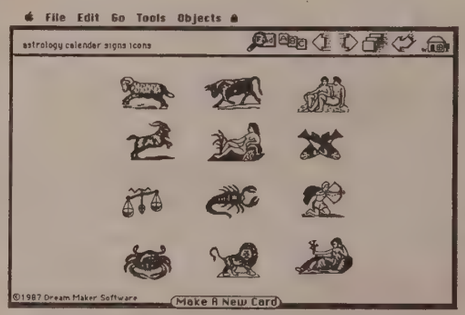
It includes a microphone, a digitizer, and two software packages. The microphone and digitizer are in a single box. If you prefer, there are plug-in connections for a better microphone or for a line-level signal from a tape deck, turntable or CD player.

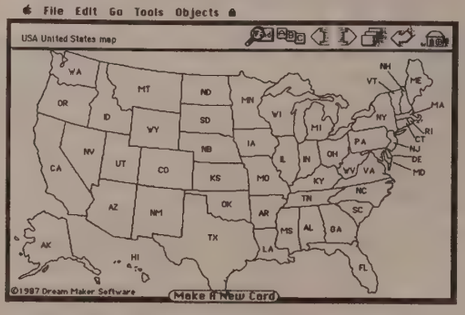
You can record with a one-card stack which simulates a recorder, or with the Sound Edit software. You can record sounds with fidelity up to 11,000 cycles and have them converted into digital pulses by the digitizer. There is a trade-off between compactness and fidelity. The better the quality of recording you choose, the more memory is required. Recording at the lowest fidelity, with a top frequency of about 2.5 thousand cycles, you can record three minutes of sound in a megabyte of memory. If you want the best sound MacRecorder has, you will only be able to record 45 seconds in the same megabyte. The lowest quality is only good for voice, the top quality will hold fair-quality music. The sounds can be used without modification in your stacks, or you can edit and shape them with Sound Edit, one of two pieces of software included in the package.

I make part of my living doing sound for television; I must admit I was cynical when I began to look at Sound Edit. Color me converted. Sounds can be filtered, volume-controlled, sped up and slowed down, and "flanged." You can generate pure tones, square waves, triangle waves and noise. You can do FM modulation on all you generate or record. If you have a Mac II, you can work in stereo. You can record any sound as an instru-



IconMaker provides artwork you can use to create buttons within HyperCard.





Another source of artwork is MacGallery, which includes a variety of seasonal, geographical, and other themes.

A few of the savvier corporations have finished rubbing their disbelieving eyes and grabbed HyperCard. Expect a stampede soon for In-House Training, Presentations, and Prototyping of software systems for the VAX/Mac partnership.

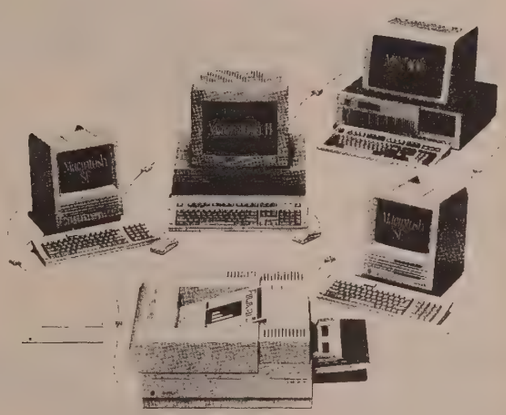
Desktop Publishers!

Do You?

	YES	NO
Use a Linotronic Service?		
Use a Copy/Duplication Service?		
Want to Save Money Producing Your Work?		
Want to Save Time Producing Your Work?		

If you answered YES to Two or more of these questions then you should use

JET™



What is JET?

Simply put, JET is a hassle free way to have your desktop published documents typeset and duplicated. JET is Faster, Less Expensive, and more convenient than using a walk-in service bureau or other competing bureau service. The JET system allows you to eliminate all travel costs and time involved in producing your work.

What does JET save me?

JET saves you both time and money in several ways. Our research has shown that JET can save you as much as $69.00 per page produced. JET saves you by:

- Eliminating all travel time to and from typesetting and duplication shops, all owing you to work on more productive things than fighting traffic.
- Giving you a single source for your typesetting, copying, equipment purchase and repair, and training.
- Giving you control over when your work is done, and how it's delivered.
- Saving you the expense of renting equipment you already own.
- Recovering business you might otherwise not be able to handle.
- Getting more value and use from your existing desktop publishing.

What do I need to use JET?

JET is simple and easy to use. All you need is your existing Desktop Publishing System, a modem, a desire to save time and money, and your JET software kit.

But I don't understand modems.

That's OK. JET is designed, like the Macintosh., to be easy to use. You don't have to do anything more than press a couple of buttons on the screen to operate JET. In fact we'll install JET and provide you with initial training if you want. You concentrate on your work, not on the computer.

I don't know how much work I'd need.

Our experience has shown that once you start using JET you very quickly find that it becomes a necessary part of your business. We offer a variety of membership plans that make it easy for you to take advantage of JET, regardless of your budget.

What else can Julian do for me?

Julian Systems expert staff of specialists, many with professional backgrounds in the fields of graphic design and printing, can assist you in optimizing your existing or new desktop publishing system. Whether it's a network or a system enhancement, a Julian Specialist can provide you with truly knowledgable assistance, backed by a company with years of Macintosh Specific experience. So try Julian Systems when you're buying your publishing system and get a COMPLETE SOLUTION.

JULIAN SYSTEMS, INC.
415/686-4400

Authorized
Value Added Reseller

Apple logo and Macintosh are registered trademarks of Apple Computer Inc. JET, JET Logo, and Bar J logo are trademarks of Julian Systems Inc.

Double the Capacity of Your Hard Disk!

Using the C.C.A., advanced R.L.L., nearly doubles the capacity of most of the ST506 standard hard disks like Seagate, Miniscribe, CDC, Maxtor, MFM, as well as R.L.L. approved drives. Compatible in XT/AT with MS-DOS, PC-DOS and certain versions of Novell. Handles up to 15 heads and 1024 cylinders increasing capacity by 90%.

C.C.A. Advanced RLL Board . . . . . $CALL
Enhanced 101 Keyboard $49
10 MHz 286 Motherboard with 2 Serial/ 1 Parallel and up to 1MB RAM. U.S. Made $295
External 5¼" Drive for PS/2 . . . . . $CALL
1200B Internal Modem by Cygnet $68

Samsung 1200 Ext. Modem $89
• IBM • Compaq • Epson • Memory Chips • Seagate • Everex • HP LaserJet • Panasonic Printers • TEAC • Fujitsu • Toshiba • Zenith • Mitsubishi Drives • W.D. •

Resellers Only! **Call (415) 526-6906**
FAX: (415) 526-7859

MICROSELL
863 C SAN PABLO AVE.
BERKELEY, CA 94706
(415) 526-6906

Compaq 286, 640K, 1.2MB Dr., 40MB Hard Disk $2350
Compaq Portable II Model IV . $2750
Compaq 386/20, 60MB $5495
Compaq Portable III 20MB/40MB . . . . . $3650/$4250
Compaq Portable 386 40MB/100MB . . . . . $5695/$7195
Toshiba T1000 . . . . . $779
Toshiba T1200H $2395
Toshiba—Other Laptops . . . . $CALL
Toshiba 321SL $499
IBM PS/2 . . . . . $CALL
Everex 386/20 Computer . . . . $CALL
Everex—Other Products . . . . $CALL
Zenith Supersports Dual Floppy, 20MB Laptop $2595
Zenith Z-183, 10MB $1995
Zenith Z-171 . . . . . $1295
Logitech L-7 Mouse $79
Microsoft Mouse $109
Keytronic KB101 . . . . . $79
Panasonic 1080i/1090i $199/229
Diconix Inkjet $339
Epson LX800/LQ800 . . . . . $199/$349
Epson FX286E $429
Epson LQ500 . . . . . $369
Epson LQ850/LQ1050 . . . . . $CALL
Epson FX850/FX1050 . . . . . $CALL
NEC P2200 . . . . . $365
HP Laserjet II $1775
NEC LC890 . . . . . $3395
HP Plotters . . . . . $CALL
Okidata 192+/193+ . . . . . $319/$455
Okidata 182+/393 . . . . . $269/$1095
NEC P6/P7 . . . . . $CALL
ATI VIP VGA $255
Vega D1x/VGA . . . . . $LOW
NEC Multisync $575
Sony Multiscan $599
Seagate . . . . . $LOW
Micropolis . . . . . $LOW
Toshiba 3.5" . . . . . $LOW
Fujitsu, TEAC . . . . . $LOW

LEADING EDGE
D2 Computer in stock

Featuring:
- 80286 (6, 8 and 10 MHz)
- 1.2 MB disk drive
- Six full-sized expansion slots
- Parallel and serial ports
- 640K RAM expandable to 1 MB
- EGA, CGA, MDA and Hercules graphics emulation with automatic mode switching
- 101-key keyboard
- MS-DOS 3.2 and GW BASIC 3.2
- 20 MB hard disk
- Monochrome Monitor

Leading Edge Model "D" 512K, 1 Drive, 20 MB Hard Disk, Monochrome Monitor $1049

$1595

Leading Edge and Logo and Model "D" are registered trademarks of Leading Edge.

TOPS
Authorized Dealer
TOPS network running over low cost phone cable allows you to connect PCs and Macs. It allows you to share files and printers. Applications can exist in any computer. Translator utility will convert popular file formats.
We sell, install and train.
Complete system to connect one Mac to one PC.
$469

Monarch 286
- Intel 80286 CPU
- 10 MHz 0 Wait State
- 512K RAM, 1.2 MB Drive
- 2 Ser/2 Par Ports
- Monographics Card & Monitor
- 8 Expansion Slots Keyboard
- 200W Power Supply

$1095

Complete system to connect one Mac to one PC.
$469

AST Premium 286
AST 286, 1 MB RAM
40 MB Hard Disk
Monochrome Card & Monitor
$2450

AST Premium 386
AST 386, 1 MB RAM
40 MB Hard Disk
Monochrome Card & Monitor
$4195

Monarch 386
- Mylex Motherboard
- Intel 80836/16 MHz, 32 bit CPU
- 1 MB RAM, 1.2 MB floppy
- 20 MB HD, 28 ms
- Serial/parallel port
- Monographics board, mono monitor
- 8 expansion slots, tower case

$2895

Novell Solution
3 Station Arcnet Network:
- Novell Netware ELS Operating system.
- 3 Network interface cards.
- 1 Passive Hub.

$1095

Ethernet alternatives available

AUTOCAD RELEASE 9
Meeting the needs of an evolving market

RELEASE 9 features:
- Pull down menus
- Dialogue boxes
- File portability

& much more

Ask for a demonstration
Authorized AutoCAD dealer
AutoCAD is a registered trademark of Autodesk, Inc.

AUTOCAD®

NEC Multispeed EL $1295
Intel Inboard 386XT $799
Amdek 732 VGA Monitor with ATI VIP VGA Card $665
Toshiba T1000 . . . . . $779
Intel Aboveboard 286, 0K with FREE Sidekick Plus $149
Lotus 1-2-3 with Duet $295
Free Lance Plus $325

monarch computers

863C SAN PABLO AVE.
BERKELEY, CA 94706

415-526-6906
FAX 415-526-7859

ment for HyperTalk's "play" command. Finally, you can do editing down to the sample level — that's as little as 1/11,000th of a second. I am going to throw away my razor blade and editing block and get a copy of Sound Edit for the station.

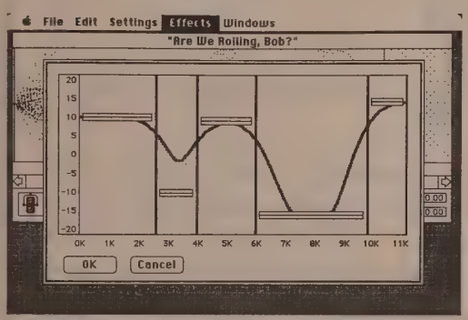
The recording process is hypersensitive to mouse movement when you use an SE or Mac II. You have to keep the mouse off the pad, or the recording stops.

This is minor, though, in comparison to the remarkable value you get. The digitizer or the Sound Edit software alone should go for $200. This one you may want to buy before they wake up. (MacRecorder, $200, Farallon Computing, 2150 Kittredge Street, Berkeley, CA 94704, 415/849-2331.)

Icon Factory

If you want to do spiffy presentations, you want good-looking icons. If you want to do animations, you want to change icons. In either case, I suspect you want HyperPress's *Icon Factory*.

The program lets you create icons, change icons, and move icons from one stack to another. It is therefore a complete utility for customizing corporate logos or cartoon characters for your own stacks. It means that you no longer have to settle for the buttons that come with *HyperCard*.



MacRecorder's SoundEdit, showing the sound wave for the word "rolling."

You get a fat-bits editing area on which you can design or change an icon, while a small copy of the icon shows you how it will look when you are finished.

"But I am not an artist!" you protest. *Icon Factory* lets you take "snapshots" of any art in any *HyperCard* stack. If you have clip art available (see *Mac Gallery* below), you can make sections of it into buttons for your stacks. You enable the "snapshot" option in *Icon Factory*, and then take a small frame with you to another stack. With a click, you can capture any image as an icon.

Icon Factory also gives you 2,000 premade icons. They include most of the program icons you find on a Mac Desktop, dozens of corporate logos, and hundreds of graphics to represent everything from hardware to fantasy characters. Those that are almost-but-not-quite-right you can haul into the editor and touch up to your specifications.

Nice work, this program. (*Icon Factory*, $49.95, HyperPress Publishing, PO Box 8243, Foster City, CA 94404, (415) 345-4620.)

Mac Gallery: HyperCard Edition

A lot of people find themselves in a contradiction. The Mac is a graphic medium; that's why they love it. And most people are not artists.

Mac Gallery by Dream Maker Software may be the ticket for such folk. It is a collection of high-usage clip-art. You can clip images from among the 400 included and paste them into your work with Dream Maker's blessing.

You get the 400 images on a *HyperCard* stack. You also get the "*Mac Gallery* TourGuide," which is full of useful ideas about how to manipulate images. You can use the gimmicks to make a fair new collection of images out of the ones you already have. You also get a very nice collection of borders, with instructions about how to stretch or shrink the borders to fit your graphic.

The images in the clip-art factory tend toward the cartoonish. Very well done, though. They are suitable for home, small business and house-organ use. (*Mac Gallery*, $49.95, Dream Maker Software, 4020 Paige Street, Los Angeles, CA 90031, 213/221-6436.) (Make sure you specify the *HyperCard* version or the *MacPaint* version.)

Bug Alert!

A lot of fine *HyperCard* software has problems with version 1.2 of HyperCard. Among these are *Reports* from Activision and MacRecorder from Farallon Computing. It's not the fault of the software maker, of course; it's the *HyperCard* upgrade that is causing the problem. Give the manufacturer a call if you start having a problem. Registered users of *Reports* should be getting a 1.2 version of the program in the mail.

Feedback, Flowers And Brickbats

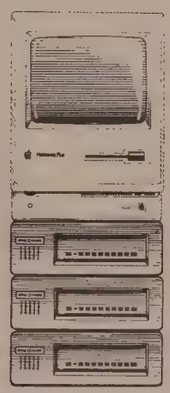
You can leave messages, comments, praise and blame for stackware and *HyperCard* on the WELL (415/332-6106; user ID "birrell") or CompuServe (User ID 72466,3567) or by US Mail to: Birrell Walsh, PO 1104, San Francisco, CA 94141.

SOFTWARE OUTLET

104 UNIVERSITY AVE. • LOS GATOS •CA • 95030 • (408) 354- SOFT

Seagate

APPLECRATE™



• 2 year warranty
• SCSI CABLES
• BACKUP SOFTWARE
• SYSTEM SOFTWARE

20 MEG $560
40 MEG $770
60 MEG $839
80 MEG $1249

-check out these savings-

MAC GAME BLOW-OUT

SIERRA®

SPACE QUEST (REG. 49.99) $19.99
KINGS QUEST I (REG. 49.99) $19.99
KINGS QUEST II (REG. 49.99) $19.99
KINGS QUEST III (REG. 49.99) $19.99

ZAISAN es-1

EXECUTIVE WORK STATION

• VOICE/DATA COMMUNICATION
• TELECONFERENCING
• Auto Dailer
• 2 line Phone System
• Personel Directory
• Calander / Scratch Pad
• Appointment Reminder
• High Quality Speaker Phone
• Message/ Text Editor
• and much, much more. . .

reg. $695
NOW $349

THESE SPECIALS AND MANY MORE....

BMUG

BY DAVID MORGENSTERN

Tales Of System 6.0

Welcome to the second BMUG column—hey, we're veterans! Put on your boot-blocks and prepare for a 44 meg hike.

It's Not A Six Show

The crowd control is improving at the weekly main BMUG meeting on the UC campus. A marketing person recently showed off a new version of a color-painting program. After the program twice failed to execute a command, she exclaimed, "Believe me, it works quite well!" There were few of the usual cat-calls or raspberries; instead, an exquisite incredulous silence filled the hall. Well, maybe there were a few snickers, but very respectful!

The new 6.0 System release addresses the needs of a user with a Mac II with 5+ megs of memory, color monitor and a 300+ meg hard disk. Isn't that what everyone is using?

Most of the talk these past few weeks has been devoted to the new System software. Every six months Apple's software engineers play a game of chicken with our software by sending out new versions of the Mac operating system. You can pick up the four disk set ($8.00) at the BMUG office, by mail, or at any meeting.

New system software is not developed for any old Mac user. It always addresses problems faced by the high-end user. At one time this meant a 512K Mac with a 10 meg serial hard disk, or a Mac Plus with a 40 meg SCSI drive. The new 6.0 System release addresses the needs of a user with a Mac II with 5+ megs of memory, color monitor and a 300+ meg hard-disk. Isn't that what everyone is using?

Every new System release fixes some old bugs and creates some new problems for software currently in use. Most of the "fixes" are for color, sound and MultiFinder. Most of the new problems are in color, sound and MultiFinder, of course.

Here are some of the fun and obscure changes found in 6.0 (there are pages and pages of *technical notes* and *change history* for each System revision).

- Remember back four or five months ago, when Andy Hertzfeld (programming genius and member of the original Mac development team) came out with a bit of code that made the color on the Mac II run faster? It was first called QuickerDraw (the exploits of an animated horse forced a name change), but released as *QuickerGraf*. When Andy offered it to Apple, we heard the top execs say, "use something developed outside of Apple?" Color QuickDraw now incorporates the *QuickerGraf* code.
- Have you ever tried to tell the Mac that there might be a 21st century? When the Mac calculates a date it uses the Script Manager software, and, until System 6.0, the range of date routines was limited to this century. We can all breathe easier now that the date range covers 35,000 years.
- If you're writing in Hebrew or Arabic and English, you'll like some changes in the 6.0 System. Apple has cleaned up the way the Script Manager handles bi-directional text—it used to be like two trains on the same tracks.
- MacroMaker is an INIT that creates macros. It uses a tape-recorder-looking interface, and everyone thinks *QuicKeys* by CE Software is better.
- Have you ever looked in a "power user's" System folder? What a mess! It's usually a jumble of downloadable fonts, dictionaries, help-files, INITs and program-required files. Before 6.0, looking at the folder by type wouldn't help, as they were all considered documents. Now the Finder identifies

Copyright © 1988 by David Morgenstern. David Morgenstern is a Bay Area "MacNurturer" and BMUG member. David is DMORGENSTERN on GEnie and himself at (415) 641-7352.

Tips from the BMUG Help Line:

If you decide to help Apple test the new System software, please use the Installer program included with the release. Early HFS installer software didn't work very well, and it was common practice to drag the new System onto the target desktop. This won't do the job with the 6.0 System. The 6.0 System requires some major changes to your boot blocks—the part of your disk that knows what's what when it boots. These changes don't occur when you drag the individual System files. However, the boot blocks will be changed if you drag the whole System folder. Play it safe and use the Installer software.

Along with the regular Installer Scripts (the works), the new System has provided "minimum scripts" for use on floppy disks. These come in three flavors (Plus, SE and Mac II—sorry, no 512Ks allowed in System 6.0). Since these scripts are read by the Installer program, you might get a bright idea and minimize your hard disk, or existing floppies. Right? If you read the instructions—who me?—you would know that the minimum scripts are meant to be "installed" on a blank floppy, or a floppy without an existing System folder.

We have the BEST deals & BEST service in the Bay Area ! !

New Arrivals

S.U.M. - Symantec Util	59.00
MicroSoft PowerPoint 2.0 - color	229.95
MicroSoft Word 3.02 - price reduced	210.00
VideoWorks II HyperCard Driver	57.95
VideoWorks II Accelerator	105.95

We will BEAT any advertised price in the Bay Area.*

* Manager approval required.

Hardware Specials

Hard Drives

PL 30 HD	$ 599
PL 30 Turbo HD	$ 749
PL 50 HD	$ 829
PL Infinity HD	$ 979
10 Mb Floppy disk	$ 18
PL 30i HD for SE with ext. drive case for internal floppy drive	$ 687
PL CDC 90i for II 16.4 ms access time	$1375
PL 100i for Mac II	$ 1295

Memory Upgrades

1 MB SIMMs - IN STOCK	
128K -> 512K	$ 150.00
512Ke -> 1 Meg	$ 149.95
512Ke -> 1 Meg with SCSI Port	$ 209.95
512Ke -> 2 Meg	$ 359.95
512Ke -> 2 Meg with SCSI Port	$ 409.95
1 Meg -> 2 Meg for Mac Plus	$ 269.95
1 Meg Simm	$ 279.00

Unbeatable Prices !

4th Dimension	395.00
Adobe Illustrator	318.00
Beyond Dark Castle	26.00
Chinon 800K External Drive	179.00
Cricket Presents	309.95
FreeHand - NEW	288.00
FullWrite Professional	249.95
MacRecorder Digitizer	129.95
MS Word 3.02	210.00
PageMaker 3.0	385.00
Prometheus 2400G Modem	199.95
Prototyper - great tool	86.95
Quark Xpress	475.00
Reports - 1.2 w/Free HyperCar	58.00
Seikosha Printer - 100% Mac Compat.	249.00
TOPS - Mac	118.00
WriteNow	89.00

SOFTWARE

4th Dimension	395
Adobe Collection Edition	**89.95**
Adobe Laser Fonts	25% off
Adobe Illustrator 88	**318**
Beyond Dark Castle	26
Canvas	127
Copy II Mac 7.1	22
Cricket Presents	309.95
DataDesk Professional	309
Disk Express	32
Disk Fit	52
Double Helix II	371
Draw Again SAM	95
Eureka Solver	139
Excel 1.5	228
Falcon F-16	34
FileMaker Plus	164
FoxBase Plus - NEW	**236.95**
FreeHand	**289**
FullWrite Prof. - In Stock	**249.95**
Insight A/P, A/R, G/L,IN	399ea
JAM Session	34
LapLink - links PC & Mac	79
LightSpeed Pascal	87
LightSpeed C 2.15	116
MacDraw	135
MacLink Plus	139
MacMoney 3.0 - NEW	75
PageMaker 3.0 (In Stock)	**375**
PixelPaint	297
PowerPoint 2.0 - color	229.95
Prototyper	86.95
Quark Xpress	475
QuicKeys	59
ReadySetGo 4	279
Report 1.2 w/FREE H.C.	54
Stepping Out II	59
Suit Case 1.2	39
S.U.M. - Symantec Util	59
SuperPaint	80
SuperLaserSpool	99
ThunderScan w/ new version of software,hardware	197
TOPS (Mac)	**118**
TOPS FlashCard	189
TOPS DOS	125
VersaCad - NEW	**1595**
VideoWorks II	127
VideoWorks II Accelerator	105.95
VideoWorks II HC Driver	57.95
Word 3.02 (not a TYPO !)	**230**
WordPerfect	**179**
Works - MS	177
Write - MS	129
WriteNow	89

HUNDREDS more items in stock!! Call for complete price list.

HARDWARE

128K -> 512K Upgrae	150
Avatex Modems	
1200HC-100% Hayes	116
2400-100% Hayes	236
Prometheus 2400G Modem	269
Telebit 19.2KBaud Modem	945
AST Turbo Laser PS - NEW 3 Mb, can use with Mac & IBM FAST, GREAT PRICE	3299
A+ Optical Mouse	75
A+ Optical Mouse - ADB	96
Chinon 800K Drive	179
DataDesk Keyboard	139
Dove 512K -> 1Meg Upg.	150
512K -> 1 Meg w/SCSI	210
512K -> 2 Meg	360
512K -> 2 Meg w/SCSI	410
1 Meg -> 2 Meg (for Plus)	270
SCSI Port	95
1Meg -> 2 Meg (for SE)	295
LaserView Monitors	CALL
Mac 286 Card for II	CALL
Mac IRMA (II,SE)	CALL
MacRecorder - NEW	129.95
NetModem	468
NetSerial	309
Passport MIDI Interface	75
PL 30 HD-Great Price	599
PL 30 Turbo HD	779
PL 50 Ext Hard Disk	829
PL 90 CDC Int. for II	1375
PL 30i HD for SE w/FREE case for your int. floppy dr.	697
Panasonic 1080 i with special Macintosh Card	295
QMS PS 810 Laser Printer	3985
Radius Accelerator	749
w/68881	1049
Radius FPD	1445
Radius 2-Page Display	1895
SE Silencer	49
Seikosha Printer for Mac	249
System Saver Fan	70
ThunderScan	197
Turbo Mouse (+/SE)	90

SONY DISKS

3.5" SS/DD (bulk)	1.09 ea
3.5" SS/DD (10 Pak)	12.00
3.5" DS/DD (10 Pak)	16.50
3.5" DS/DD (bulk)	1.39

Misc. Items

HyperCard Book	26
HyperTalk Book	20
Mac Carrying Case- fits all, with room on top for HD.	65
ImageWriter Case	42
Mac Security Kit - fits all	35
Surge Suppressor	19

MUST BRING IN AD FOR SPECIAL

M.A.C.
Modern Accessories for Computers
Macintosh Everything Computer Store

800-BUY-A-MAC Order Line for US and CA (Toll Free !) (415) 644-0584 FAX
(415) 644-0516 Customer Service & Technical Support
(415) 644-0546 Corporate, Gov't & International Dealer Purchase - Bid Desk
2156A University Ave, Berkeley, CA 94704 *VISA / MC / COD / PO's ARE WELCOME !*
DEALER PRICING AVAILABLE
WE SHIP DOMESTICALLY / INTERNATIONALLY FAST !

Hours
Mon-Sat
10-6 PM

Every new System release fixes some old bugs and creates some new problems for software currently in use. Most of the "fixes" are for color, sound and MultiFinder. Most of the new problems are also in color, sound and MultiFinder.

INITs as *Startup documents*, CDEVs as *Control Panel documents* and device files as *Chooser documents*.

- The new LaserWriter driver has a new option for smoothing bitmap fonts separately from other bitmaps. Many scanned bitmap images look better with smoothing off. System 6.0 also allows an unlimited number of downloadable fonts. This should be considered only if you have unlimited time to print.
- Programs that act differently under MultiFinder and the regular Finder will have lots of trouble with the 6.0 System. In the previous System (the one that works), software knew it was running in MultiFinder by checking for the WaitNextEvent trap. If it was available, the program knew it was in MultiFinder; if not—Finder. Now System 6.0 supports this trap in both environments, leading to disastrous or, at best, confusing results if the program behaves differently under MultiFinder.

The question asked every 15 minutes is the one running through everyone's minds: **Should we use the new System?**

Only you can answer a question as weighty as this. It's like elective surgery or the nature of good and evil. Software developers are already announcing new versions of software to fix incompatibilities. Some of the programs having trouble are: *4th Dimension*, *FullWrite*, *Pixel Paint*, *Dollars And $ense* and all Microsoft products. If you have serious work to accomplish with these products in the next month, perhaps you should think twice before installing 6.0 on your hard disk.

If you do decide to go with System 6.0, play it safe. Make a backup of your old System folder and lock it away. You might need to use it again.

Meeting Minutiae

Suggestion for the Mac II, which sounds like an airplane: Some brave folks are replacing the loud .45a fan in the power supply with the quiet, but less powerful, .15 Radio Shack #273-243A fan, which costs $14.95. The process was described as "very straightforward."

Do you ever run your laser printer (or the one in your office) in more than one mode? It's usually set to AppleTalk, but there are a bunch of other settings. Invest in a Radio Shack #274-403. This 40-cent knob clamps on the mode switch and will make your life easier.

Come and join in the dialog every Thursday evening, 6-9 (or whenever we finish), in the Physical Sciences Lecture Hall on the UC campus.

Life-Styles Of the Memory Rich

Among the favorite new toys of the Mac power-users with power-bucks are the 44 meg "removable media" drives. These are hard-disk drives with the hard-disk in a removable plastic cartridge, the 10-wheel truck of Floppyville. All of the hardware manufacturers are coming out with some form of these drives. D. P. I., MassMicro and Peripheral Land have been leading the pack with big ad budgets.

Your run-of-the-mill hard-disk is closed up tight, but not these cartridges. They are open to the air and can be affected by sudden changes in temperature and humidity—the very changes they might find after a trip in an air-conditioned car, bus or plane when thrust in a hot drive or auditorium (like the 90+ degree heat of the Boston Macworld Expo last year). Your hard-disk cartridge starts to perform the old science class project on condensation. Running the drive with moisture on its surface is not healthy for your data!

Hence a BMUG summer tip: Wear your sunscreen and let your disk rest for an hour when going from an air-conditioned environment to a warm one. This includes all open media, cassette tapes, VCR tapes, floppies and the 44—60 meg cartridges. The more massive cartridges and VCR tapes are more sensitive to this problem. □

BMUG: Something For Everybody

BMUG is an educational non-profit corporation promoting the exchange of information. Like any growing organization, it is many different things to its 3000+ international membership. BMUG, Inc. is a computer user group located in Berkeley, California. The group specializes in computers using a graphic interface. For a while that meant the Macintosh™, but now includes other makes, models and operating systems. BMUG supports many Special Interest Groups (SIGs), a five-line BBS, help-line, software library, weekly meetings and much more. BMUG also puts out a semi-annual 300 page book that we call our "newsletter." Our motto continues to be: *We're in the business of giving away information.*

The BMUG Help Line, (415) 849-HELP, provides technical assistance and telephonic hand-holding during business hours (9 am- 6 pm). If your question can't be answered on the spot, we try get you in touch with someone who can help. Of course, not every problem can have a happy ending—but we try.

BMUG has one of the most up-to-date, comprehensive software libraries around with 200+ double-sided disks filled with the latest versions of public domain or shareware programs and *HyperCard* stacks. New disks are unveiled almost every week at the Thursday general meeting.

Our BBS offers the latest versions of files in our software library as well as news, private mail, rumors, etc. The BMUG BBS is part of the worldwide EchoMac Network on FIDOnet; by calling a local FIDOnet BBS in your area, you would then be able to get in touch with us wherever you are as well as send mail to users everywhere! With our multi-line capability you are now be able to have access to BMUG almost 24 hours a day. It's easy to use, fun, and a great resource.

BMUG has many great Special Interest Groups (SIGs). They're a great way to meet people doing or trying to do the same things you are. They include the Alpha/Beta SIGs (for new users and not-so new users), Desktop Publishing, Computer-Aided Design, *HyperCard*, Music, Professional Users, Programmers, Telecommunications, A/UX, Database Developers and more.

Upcoming Events

July 7: Pegasus II (CAD).
July 14: Everex hard disk and Telegraphics.
July 21: Prototyper.
July 28: MacLearning and FileMaker 4.

You can reach BMUG at any of the following numbers:
849-HELP (Help Line) • 549-2684 (Business Office) • 849-9114 (Announcements/Meeting Schedule).

WHAT PERFORMS LIKE A HARD DISK ?

NEVER RUNS OUT OF STORAGE

READS IBM FILES ON YOUR MACINTOSH ??

Introducing Infinity™ Drive by Peripheral Land *---- the SCSI 10MB removable disk system that will change the way you think about disk drives.*

Now you can end the limitations of standard hard disk capacities and their lack of transportable data. ***Infinity™*** *not only performs like a hard disk drive (65 millisecond access time) but it provides unlimited storage capacity with removable 10MB diskettes.*

Run out of room? Just insert another inexpensive diskette. Your storage capacity is infinite. And the cost is amazingly low: Only $18 for a 10 megabyte diskette. That's $1.80 per megabyte!

Communications bridge between your Macintosh and IBM AT and XT computers.

The ***Infinity™*** *System reads and transports IBM MS-DOS files from 1.2M and 360K AT and XT diskettes; it lets you display, edit and print IBM files on your Macintosh. That's flexibility!*

Each ***Infinity™*** *Drive comes with LaserSpeed™ a LaserWriter spooler by ThinK Technologies, BackPrint™ an ImageWriter spooler by Cortland Computer and PLI's advanced backup utility with image, file, folder, volume and incremental capabilities.*

Infinity™ *is compatible with Apple's complete line of Macintosh computers.*

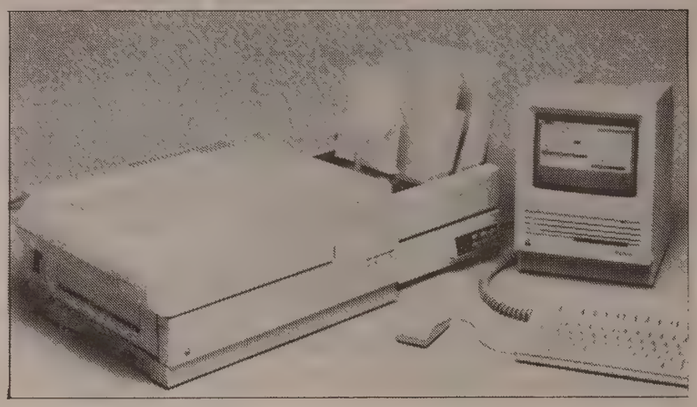
Stop by your nearest Peripheral Land dealer and test drive an ***Infinity™*** *Drive today and see the difference between standard disk drives and* ***Infinity's*** *infinite capacity. Or call us for information and the name of your nearest Peripheral Land dealer.*

Peripheral Land, Inc.

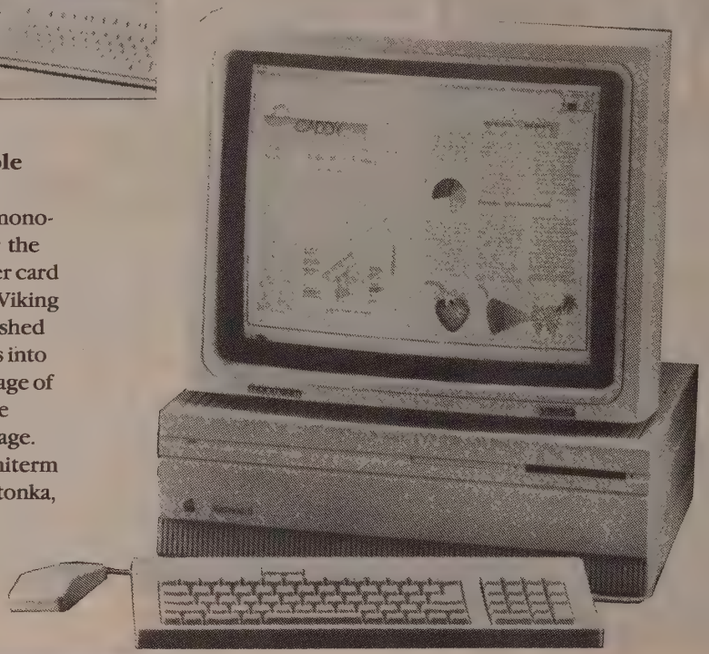
47800 Westinghouse Drive, Fremont, CA 94538

Telephone (415) 657-2211 • Telex 650305-1733MCI • FAX (415) 683-9713

Infinity is a trademark of Peripheral Land Inc. LaserSpeed is a trademark of ThinK Technologies. BackPrint is a trademark of Cortland Computers. Macintosh, ImageWriter and LaserWriter are trademarks of Apple Computer. IBM, AT, and XT are trademarks of International Business Machines. © PLI 1988

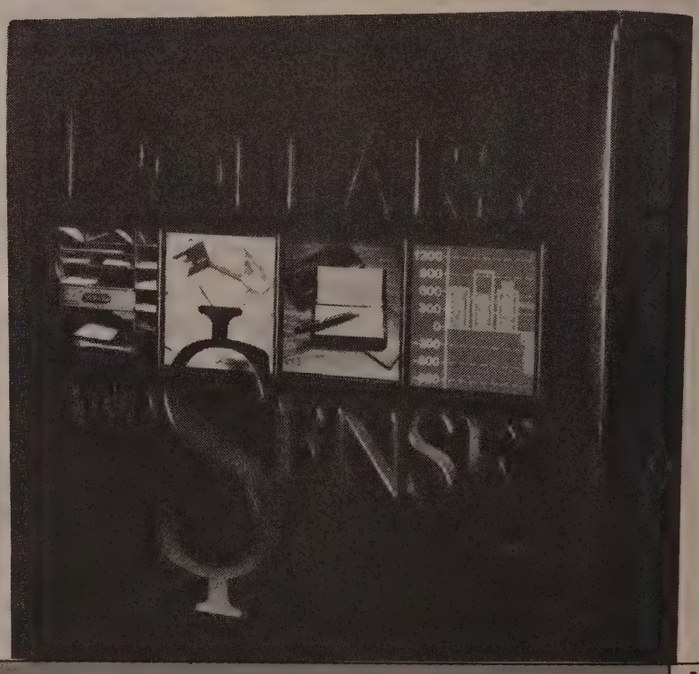


New Quieter, More Compact LaserFeeder For LaserWriter II
The Model 880 LaserFeeder from BDT Products is more compact, lighter, quieter and less expensive than previous LaserFeeder models. The 880 feeds paper and envelopes including executive stationery and Monarch envelopes. Though smaller than its predecessor, it still holds 220 sheets of paper in each of two bins, and 40 to 60 envelopes in the single evelope bin. Comes with specialized driver software compatible with most Macintosh applications. ($1,395). BDT Products, Inc., 17152 Armstrong Ave., Irvine, CA 92714. (714) 660-1386.



19" Viking 1 Monitor Now Available For Mac II
The Viking 1, a high resolution 19" monochrome monitor, is now available for the Macintosh II. With a different controller card it can also be used with the SE. The Viking 1 has a resolution of 1280 by 960, refreshed at 66 Hz. Its video card controller plugs into the Macintosh NuBus and takes advantage of the Mac II's ability to display multiple monitor images as a single virtual image. Video card included. ($1,995.00). Moniterm Corp., 5740 Green Circle Dr., Minnetonka, Minnesota. (612) 935-4151.

Dollars And Sense 4.0 Keeps Track Of Personal, Business Accounts
Dollars and Sense 4.0 personal financial management software offers improvements in transaction entry, a fully non-modal format, tiered accounts and the use of two years of data for comparisons and budgeting. Its multiple account files can help individuals simultaneously keep track of both personal financial planning and small business accounting. ($149.00). Monogram Software, Inc., 531 Van Ness Avenue, Torrance, CA 90501. (213) 533-5120.



edifice Software Package Gives Pols Needed Managerial Solutions
edifice brings the power of six business, DTP and communications applications to the beleagured elected official in one integrated package. With templates and software combining the capabilities of *HyperCard,* Microsoft *Works, Business Filevision* and MacNET, *edifice* is designed to aid politicians in their business and administrative tasks. *edifice* requires an SE or better, a 20 MB hard disk and a modem. ($1,495.00). Stagecoach Technologies, Inc., 1650 East Bethany Home Road, Phoenix, Arizona, 85016. (602) 266-1179.

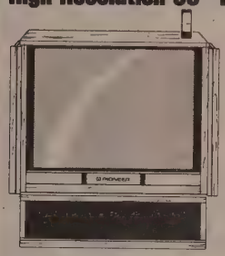
THE BEST PLACE TO BUY YOUR VCR & TV— ALL BRANDS

VIDEOSCOPE
Palo Alto
California
(415) 493-0500

3433 Alma St.
(between E. Meadow & Loma Verde—in Alma Plaza)
Palo Alto, CA 94306

(415) 493-0500
(415) 493-4166

SD-P501
High Resolution 50″ Rear Projection Monitor

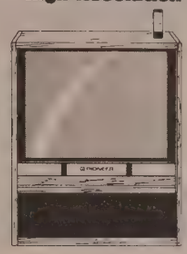


PIONEER
PIONEER ELECTRONICS (USA) INC

- Superb picture quality at 600 line horizontal resolution
- Micro computer automatically adjusts color balance according to room viewing conditions (Dynamic Picture Optimizer)
- Dynamic Focus Circuit—providing razor sharp edge-to-edge focus
- Dynamic black level correction circuit reproduces a "true black," and enhances depth and contrast
- MTS/Cable Ready
- System Remote (SR) compatible
- Brightest 50″ projection monitor available, at 250 fl

Sugg Retail $4200
Call for price

SD-P401
High Resolution 40″ Projection Monitor



PIONEER
PIONEER ELECTRONICS (USA) INC

- Superb picture quality with 560-line resolution
- The brightest picture available in a projection monitor—350 foot-lamberts
- Dynamic Focus Circuit—providing razor sharp edge-to-edge focus
- Micro computer automatically adjusts color balance according to room viewing conditions (Dynamic Picture Optimizer)
- Dynamic black level correction circuit reproduces a "true black," and enhances depth and contrast
- MTS/Cable Ready
- System Remote (SR) compatible

Sugg Retail $3500
Call for price

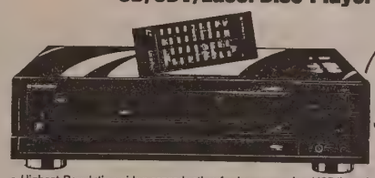
SD-2600
Pioneer Full Square 26″ (Diagonal) High Resolution Monitor TV

PIONEER
PIONEER ELECTRONICS (USA) INC

- 560 lines of horizontal resolution utilizing fine dot pitch, comb filter & advanced video circuitry
- 10-Key direct access 125 ch cable-capable tuner
- Built-in broadcast stereo (MTS) decoder
- System Remote (SR) controller also operates PIONEER LaserVision players and VCR's
- 2 video inputs with stereo audio (LaserVision, Video)
- 2 video outputs with stereo audio (VCR recording, TV)

Sugg Retail $1000
Call for price

CLD-1030
Pioneer Fourth-Generation Combination CD/CDV/LaserDisc Player



3 Discs Free Limited Time Offer

- Highest Resolution video reproduction for home movies (425 lines & 46 db video S/N ratio)
- Extra accurate sound reproduction with 2X oversampling digital filter (98 db audio S/N ratio)
- Plays all laser formats: CD, LaserVision and CDV
- Easy operation with front panel keys or multi-function remote control (included)
- Programmable in both laser disc or CD formats

PIONEER
PIONEER ELECTRONICS (USA) INC

Sugg Retail $900
Call for price

VSX-5000
Pioneer's Revolutionary A/V Receiver

PIONEER
PIONEER ELECTRONICS (USA) INC.

- Turns your existing electronic equipment into a superior A/V system
- 100 Watt/Channel featuring Pioneer's exclusive NonSwitching™ amplifier design for reduced distortion and clarity of sound
- dolby® Surround Sound for theatre sound at home
- Split screen video enhancer sharpens and focuses every video image for a better picture
- Unified A/V remote control compatible with all Pioneer system remote (SR™) components

Sugg Retail $650 **Call for price**

LD-W1
Pioneer Fourth-Generation Laser Disc Player

5 Discs Free

PIONEER
PIONEER ELECTRONICS (USA) INC.

- Plays 4 sides (2 discs) in succession with one load
- Highest resolution video reproduction for home movies (425 lines & 46 db video S/N ratio)
- Extra accurate sound reproduction with 2X oversampling digital filter (98 db audio S/N ratio)
- Digital memory and special effects
- Jog/shuttle dial on remote control

Sugg Retail $1700 **Call for price**

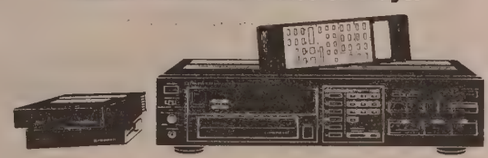
CT-1380WR
Pioneer Double Cassette Deck with Fast Auto-Reverse

- Auto-reverse recording and playback on both transport—Full Logic Mechanism
- High speed dubbing and continuous dubbing (both sides)
- Dolby® B/C noise reduction system ensures clean recording and playback
- Parallel recording (two tape copies simultaneously)
- System Remote (SR) commander included for compatibility with all Pioneer SR components
- Random access programming—up to 10 songs per tape side

Sugg Retail $540
Call for price

PIONEER
PIONEER ELECTRONICS (USA) INC.

PD-M470
Pioneer Advanced 6-Disc CD Player



- Magazine Program Selection System (MPSS) allows programming and memory of 80 tracks on 8 magazines
- Digital filter and gold-plated output jacks assure pure, accurate, digital sound reproduction
- Digital level control for direct connection to a power amplifier or remote control operation
- Compatible with Pioneer's Remote (SR) interactive A/V component system
- Honeycomb chassis to eliminate resonance

Sugg Retail $625
Call for price

PIONEER
PIONEER ELECTRONICS (USA) INC

CD-VIDEO FROM ROCK TO CLASSICAL AVAILABLE NOW!

LASER AND VIDEO SALES & RENTALS

EXTENSIVE LIBRARY OF LASER DISCS AVAILABLE

SPECIALS

SUPER VHS
Magnavox 9246 Camcorder (1 Lux) w/case
JVC HRS 8000 Digital Effect VCR

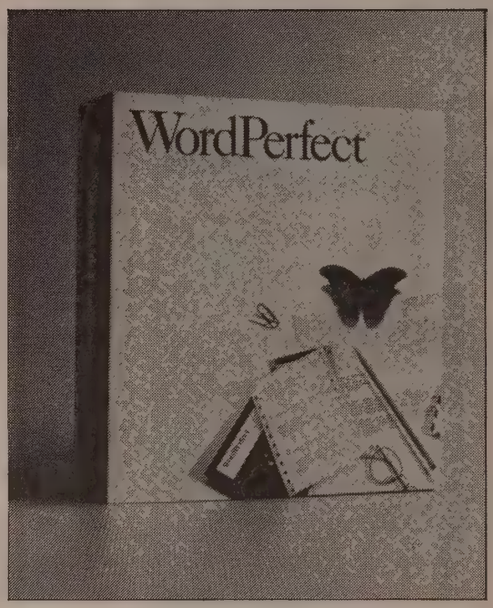
SOFTWARE
Report Writer for dBase for Focus
Dac Easy Accounting
Dac Easy Light Accounting
Byline Publishing from Ashton Tate

MISCELLANEOUS
Vidicraft Audio/Video Product Lines
Toshiba 3.5 1.44 Meg Drive
3M & Maxell Diskettes
Multivision PIP Products

OTHER SOFTWARE FOR IBM, APPLE, MACINTOSH & COMMODORE AVAILABLE

WordPerfect Supports Connectivity And Macros For The Macintosh

WordPerfect for the Mac, rather than having the 40 function keys of the PC version, has seven pull-down menus and 18 submenus. *WordPerfect* enables the numeric keypad to exactly mimic the behavior of the PC's keypad. Time-saving macros, once the sole province of PC word processors, can be constructed with *WordPerfect* for the Mac. And to emulate the noted "clean screen" effect achieved by *WordPerfect* on the PC, the menu line, ruler, document title and right scroll bar can be turned off, then reactivated by putting the mouse pointer at the top of the screen. Macintosh *WordPerfect* can write files that can be read on a PC, and access files written with *WordPerfect* 5.0 on the PC. NetWare support makes sharing files between Macs and PCs on a network an easier task. WordPerfect Corporation, 1555 N. Technology Way, Orem Utah, 84057. (801) 227-4069.

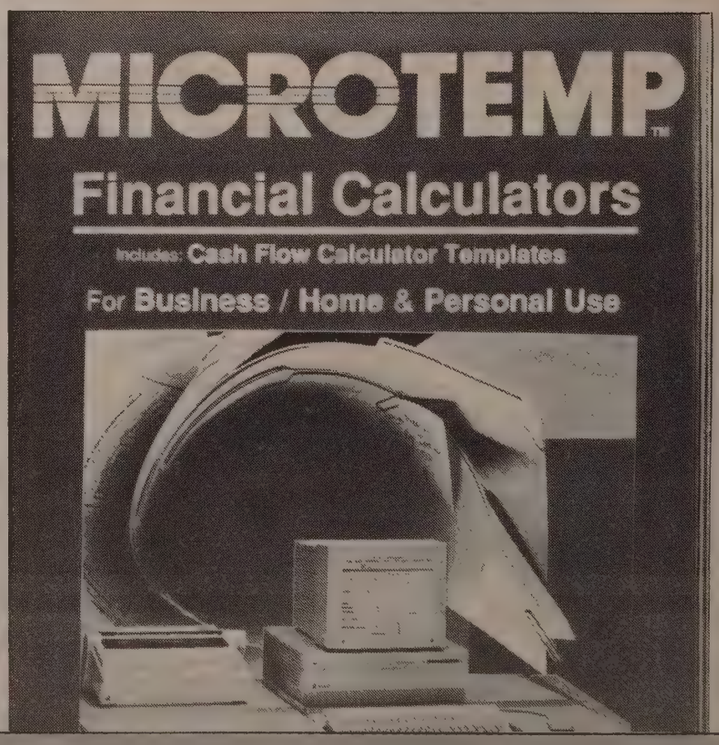


FileMaker 4 Integrates Graphics/Database Capabilities On A Network

The new *FileMaker 4* from Nashoba Systems provides database functions like cross-referencing, sorting and retrieval along with graphic capabilities that enable the user to produce more visually appealing reports. Graphic images are contained within their own fields which can be arranged and sized in any way on the page. While graphics can be created within *FileMaker*, images created with other applications can be cut and pasted into a doument. The program has a "look up" feature which enables it to search other files for data and automatically enter it into specified fields, and can construct "scripts" which help automate repetitive tasks. *FileMaker 4* supports MultiFinder and can be used on AppleShare and TOPS. Nashoba Systems, Inc., 1157 Triton Dr., Suite A, Foster City, CA 94404. (415) 578-1974.

Microtemp Templates Offer 45 Specialized Applications For Excel And Works

Microtemp Financial Calculators templates provide Microsoft *Excel* and *Works* users with 45 commonly used financial formulas for business and personal budgeting. *Financial Calculators* provides formulas for figuring monthly payments, interest rates, rates of return, break even point, amortization and more. A large Business and Financial Glossary is included. ($79.95.) Microtemp, 318 Mendocino Ave., Suite 22, Santa Rosa, CA, 95402. (707) 575-1459.



Bay Area's Largest Software Selection

MSDOS Software

Microsoft PC Excel	$299
Microsoft Windows 2.0	69
Microsoft Windows 386	139
Microsoft Quick C	69
Microsoft Quick Basic	69
Microsoft Works	139
Microsoft Word	229
Ansa Paradox 2.0	439
Delux Paint II	69
Streets On Disk	89
Symantec Q&A	239
Foxbase Plus	229
Foxbase Plus 386	349
Ventura Publisher	499
Publishers Paintbrush	195
PC Paintbrush Plus	109
Desq View	99
Wordstar Release 4	249
Designer	499
Multimate Advantage II	259
Easy Working Writer	9
Splash	69
Front Runner	139

MAC Software

Ready Set Go 4.0	$339
Image Studio	319
Adobe Illustrator	299
Reflex Plus	169
Pixel Paint	279
Microsoft Word	269
Microsoft Excel	269
Microsoft Works	199
dBase Mac	299
Fastback Plus	69
Suitcase	49
Quickeys	89
Turbo Pascal	69
Write Now	119
Deluxe Music Construction	79
Foxbase Plus Mac	239
Dollars and Sense	99
Studio Session	65
Full Paint	69
Jam Session	39
Reports	69
Mind Write	99
Trapeze	179

Plus AT&T Computers and Networks

AT&T Information Systems

6386 WGS 40Meg System	$4420
6312 WGS 40 Meg System	2530
6300 WGS 20 Meg System	1650
Starlan Network Access Unit	299

Plus Laptops

Toshiba T1200	$2395
Toshiba 5100	5500
NEC Multispeed EL	1595
NEC Multispeed HD 20 Meg	2395

Plus More Hardware

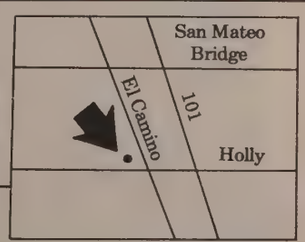
Amdek 1280 Monitor	$699
Vega VGA	299
Intel Above Board/286	339
Practical Modem 2400	179
NEC P2200	269
NEC Multisync II	599
NEC P6 Printer	499
NEC P7 Printer	699
Citizen 180D Printer	199
Complete Hand Scanner	199
NEC Multisync GS	199

. . . plus much much more . . .

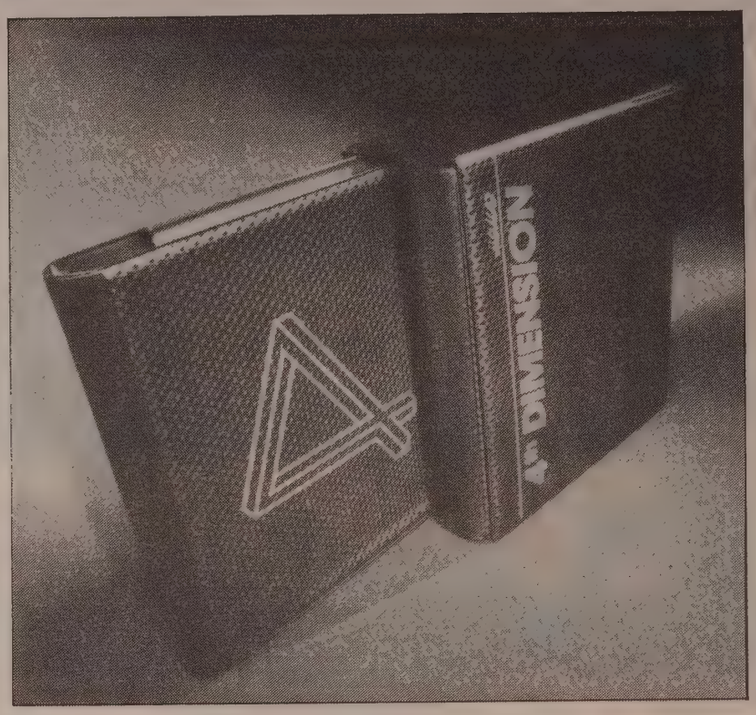
Friendly Software Store

Price subject to change without notice.

master charge VISA



376 El Camino Real, San Carlos, CA 94070 415-593-8275

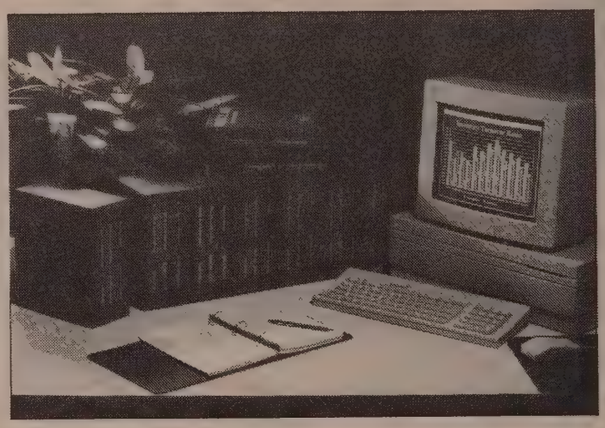


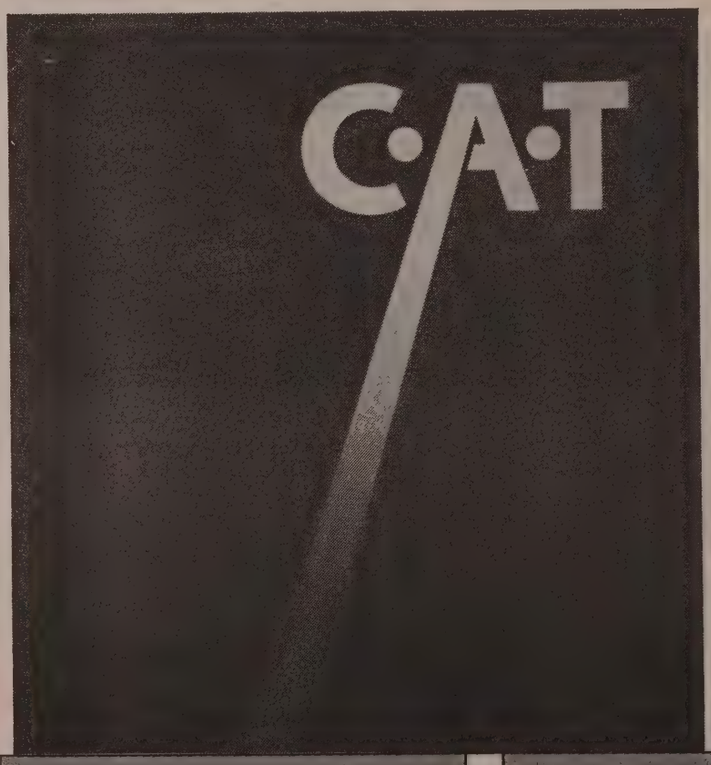
Macintosh 4th Dimension Shares File Servers, Peripherals With DOS Machines

4th Dimension users will find the usefulness of their relational database program increased with its ability to share data with MS-DOS computers. Macintosh *4th Dimension* with NetWare provides the ability to share a common set of resources with IBM personal computers running DOS, Windows/386, PC-DOS 386 and OS/2. And the *4th Dimension* user retains full AppleShare compatibility while gaining access to the PC LAN environment through NetWare.
ACIUS, Inc., 20300 Stevens Creek Blvd. Suite 495, Cupertino, CA 95014.

Great Plains Network Manager Supports Multiuser Accounting Systems

Users of *Great Plains Accounting Series* software can make an easy transition from a single-user to multi-user accounting system with *Network Manager,* a NetWare compatible networking module. Designed as a solution for growing businesses, *Network Manager* creates an accounting system that can be used by many persons simultaneously and can be expanded at any time. The module proves program-, file- and record-level lockout so that all workstations can be used at once without risking damage to accounting information. *Network Manager* supports a cash drawer, bar-code reader and printer at each workstation, as well as printers shared by all workstations on a network. A 20 megabyte hard disk and a Mac with at least 1 Mb of RAM are needed for the file server. ($795.) Great Plains Software, 1701 S.W. 38th St., Fargo, ND 58103. Call Gretchen Heim, (701) 281-0550.





C•A•T Version 2 Database: Contact Management In Distributed Environments

C•A•T is a relational database that manages and services large numbers of contacts. It records all interactions with each contact and automates routine chores like sending customized form letters, calculating orders, tracking billable time for each client and organizing files for instant retrieval. Designed for use by salespeople, brokers, realtors, medical or legal professionals and account executives, *C•A•T* supports sharing files across a network by copying them to the Macintosh clipboard and sending them via any electronic mail system. Now, with NetWare compatibility, *C•A•T* can share files with PC users as well as Macintosh users on AppleTalk.
Chang Labs, 5300 Stevens Creek Blvd., San Jose, CA, 95129. (408) 246-8020.

IBM Software for $3.49

Thousands of IBM/Compatible Public Domain and Shareware Programs Are Available from the Micro Star Library, and Priced at **Only $3.49**

ORDER TODAY on our Toll Free Phone Lines

ORDERS SHIPPED OUT SAME OR NEXT DAY

GAMES

JET SET FLIGHT SIMULATOR (102) Be a jet pilot at the controls.
GLOBAL THERMAL NUCLEAR WAR (105) Frightening possibilities.
ARCADE GAMES (106) Has Kong, a 3-D Pacman, Bricks, Pango. (Requires color.)
BASIC GAMES (107) Pacman, Lunar Lander, Startrek, Meteor, Breakout, and others.
CARD GAMES (109) Canasta, hearts, draw poker & bridge.
STRIKER (110) Defender-like game. "Top Gun" in space.
FLIGHTMARE (112) Futuristic fighter pilot game. (Requires color graphics adapter.)
SLEUTH (117) Who done it?
MONOPOLY WITH GRAPHICS (118) Color or monochrome.
DUNGEONS AND DRAGONS (119)
GAMES IN BASIC (124) Lander, biorhythms, desert, Phoenix, Star Wars, others.
TRIVIA GAME (130-131) (2 disks) Extensive trivia game.
PROFESSIONAL BLACK JACK (148) Become a pro.
QUEST (152) Role playing adventure fantasy game. (Requires color.)
PINBALL (153) Many games. Also includes a great maze game.
BRIDGE PAL (171) Complete game of contract bridge, with tutorial.
FENIX (193) Just like the famous arcade game.
SPANISH HANGMAN (196) Fun way to learn Spanish.
BONZOWARE (199) Multi-faceted entertainment for adults only.
KID-GAMES (GAM 8) Animals math, clock game, alphabet, etc.
3-D CHESS (GAM9) Incredible. 2D and 3D. Many levels. Play back moves, store games.
WIZARD'S LAIR (GAM14, GAM15) (2 disks) Like Dungeons & Dragons, w/maps, sorcery, etc.

EDUCATION

FUNNELS AND BUCKETS (201) A fun way to learn basic math.
MATHPAK (202) Tutorial with lessons in higher mathematics.
PC-TOUCH (204) Typing tutorial.
EZ-SPELL (206) Checks spelling.
EDUCATIONAL PROGRAMS (207) Preschool and elementary.
BASIC TUTORIAL (208) Learn programming with BASIC.
BEGINNING SPANISH (211) Tutorial
BIBLEQ (214) The Bible with this question-answer tutorial.
SPANISH II (232) Sequel to #211.
AMY'S FIRST PRIMER (248) Teaches alphabet, numbers, shapes, colors, counting, etc.

MUSIC

PIANOMAN 3.2 (301) Turn your keyboard into a piano. Fun!
PC-MUSICIAN (302) Compose, save, and play music.

WORD PROCESSING

PC-WRITE 2.71 (401-402) (2 disks) Latest version of this popular program w/spelling checker.
NEW YORK WORD (403-404) (2 disks) Powerful split screen editing, mail merge, etc.
LETTER WRITER (405) The easy way to write letters! Popular.
PC-STYLE (413) Analyzes style and readability of your writing. Works with Wordstar, PC-Type, & ASCII.
PC-TYPE+ (421-423) (3 disks) Excellent. Has mail merge, 100,000 word spelling checker. Interfaces with PC-File +, PC-Style.

SPREADSHEETS

EZ-SPREADSHEET (509) Easy but powerful. For the beginner.
PC-CALC+ (512-514) (3 disks) Jim Button's famous Lotus clone.

SPREADSHEET TEMPLATES

LOTUS MACROS (601) Save hours of work. (Requires Lotus 1-2-3)
LOTUS SPREADSHEET TEMPLATES (602) Ready made. (Requires Lotus 1-2-3)
TECHNOJOCK TUTORIALS (626) Teaches Lotus and dBase, menu-making, etc. Excellent.

ACCOUNTING AND FINANCE

PC-GENERAL LEDGER (701) Popular accounting system. Easy!
MR. BILL (702-703) (2 disks) For billing customers; invoices, client reports, audit trail.
CPA LEDGER (706-708) (3 disks) Complete GL.
PC-STOCK (712) Analyze market trends. Includes graphics.
PC-PAYROLL (714) Menu driven payroll system.
PERSONAL FINANCE MANAGER (715) Household budget manager. Keep track of checking, savings, investments.
CHECKBOOK (752) Complete system with online help.
EMPLOYEE MANAGEMENT (793) Teaches principles of the famous One-Minute Manager.

DATABASE PROGRAMS

PC-FILE+ 2.0 (801, 805, 837) (3 disks) Rated better than dBase III+ by Consumer Reports.
PC-GRAPH (802) Creates graphics directly from PC-FILE.
FILE EXPRESS 4.0 (803-804) Powerful system. Allows 32,000 records. Sorts up to 10 key fields.
NEWBASE (809) User-friendly menu-driven DB system.
DBASE III ROUTINES (815) Over 60 helpful dBase III routines.
WAMPUM (824-825) (2 disks) Dbase III clone. dBase III compatible

GRAPHICS

KEYDRAW CAD SYSTEM (1001-1002) (2 disks) Popular. (Requires color graphics.)
3-D (1003) Create and edit 3-D objects. (Requires color graphics.)
SIDEWAYS (1007) Prints your text sideways.
ANIMATOR (1011) Create animated pictures on your PC.
SIMCGA (1027) Use with Hercules graphics card/compatibles to run programs requiring CGA.
READ MAC (1041) Digitized pictures of Ashley, Cheryl, Brooke and Spock. ADULTS ONLY!
FINGERPAINT (1050) Use keyboard or mouse to draw. Like MacPaint. (Requires CGA or EGA)
DANCAD 3-D (1051, 1052) (2 disks) Create 3-D graphics. Rotate, magnify, etc. Runs on CGA, EGA, or Hercules/compatibles.

TELECOMMUNICATIONS

Q-MODEM 3.0 (1101-1102) (2 disks) Fast modern program.
RBBS-PC (1107-1109) (3 disks) Multi-user BBS.
PROCOM 2.42 (1112-1113) (2 disks) Hacker's delight. Redial capability. Latest version.

SECURITY/HACKING

UNPROTECT PROTECTED PROGRAMS (1202) Make backups of protected software.
UNPROTECT II (1203-1204) (2 disks) More ways to backup commercial software.
UNPROTECT III (1205) Unprotect Softguard protection.
UNPROTECT IV (1206) More programs you can unprotect.

DOS

DOS TUTORIAL (1301) Teaches you to use DOS.
DOS HELP (1302) Convenient help when a problem arises.
STILL RIVER SHELL (1304) Run DOS commands from a menu. Makes using DOS easy.
BATCH FILE TUTORIAL (1305) Utilize batch file processing.
DOS TIPS (1311, 1314) (2 disks) Advanced tutorial.

BASIC

PC-PROFESSOR (1401) BASIC tutor.
BASIC PROGRAM GENERATOR (1402) The menu driven way to write programs.
SWISS ARMY KNIFE (1406) Tools for programming in BASIC.

APPLICATIONS

FORM LETTERS (1907) Commonly used form letters and business applications.
EZ-FORMS (1908) Make forms to meet different needs.
MAIL MASTER (1910) Create mailing lists. Print letters and labels.
ASTROLOGY 9.4 (1916) Calculate your own chart. Prints wheel.
HOME INVENTORY (1966) Track all your possessions.
LOTTO MASTER (1981) Play the lotteries w/scientific methods.
MEMBERSHIP SYSTEM (1984) Great for clubs, churches, etc.
FAMILY HISTORY (2203-2204) (2 disks) Create files and genealogical reports.
DR DATA LABEL (2327) Powerful mailing list program. Customize labels to size and format.
CITY DESK (2513) Simple desktop publisher.

UTILITIES

DESK COMMANDO (2607) Better than Sidekick. Many features.
EPSON PRINTER UTILITIES (2705) Change print modes on Epson or compatibles.
LINCOMATIC BANNER (2714) Creative banner making.
LIGHTNING PRESS (2718) Printshop clone. Includes graphics for greeting cards, letterheads, posters, newsletters, etc.
MASTERKEY (2805) Like Norton's. Retrieve deleted files.
AUTOMENU (3003) Make PC menu driven. Multiple passwords.
PC LABS BENCHMARK (3039) Comprehensive testing. Compare computers before you buy.

RELIGION

THE BIBLE (3301-3306) (6 disks) Old Testament, King James version.
THE BIBLE (3307-3308) (2 disks) New Testament, King James.
WORD WORKER (3309-3310) (2 disks) Bible search program. New Testament, King James.
BIBLEMEN (3330) Excellent Bible quiz program.

MICRO STAR

POST OFFICE BOX 4078 • LEUCADIA, CA 92024-0996

HOURS: Monday - Saturday 7 AM - 5:00 PM, Pacific Time

TERMS: We accept MasterCard, VISA, Checks (allow checks 10 days to clear) Money Orders, and COD (add $4).
MINIMUM ORDER: 5 Disks, $3.49 per disk. For 3½" format add $1/disk.
SHIPPING & HANDLING: $3.50 (Total per order).

CALL TODAY FOR FREE CATALOG

NATIONAL: 800-443-6103
CALIF 800-443-7430
FOREIGN: 619-436-0130

WE INSTALL NOV

(Celebrating our 5th

AST PREMIUM DESKTOP COMPUTERS

AST Premium/386 Model 3150/E Base CPU with 2MB RAM, 155MB ESDI Hard Drive 5,975
AST Premium/386 Model 390 Base CPU with 2MB RAM, 90MB ESDI Hard Drive 5,185
AST Premium/386 Model 340 Base CPU with 1MB RAM, 40MB (20ms) Hard Drive 3,849
AST Premium/386 Model 300 Base CPU with 1MB RAM, No Hard Drive 3,175
AST Premium/386 40MB Monochrome System 3,795
AST Premium/386 40MB EGA (640x350) System 4,175
AST Premium/386 40MB VGA (800x600) System 4,475
AST Premium/386 80MB Monochrome System 4,030
AST Premium/386 80MB EGA (640x350) System 4,410
AST Premium/386 80MB VGA (800x600) System 4,705
AST Premium/386 90MB Monochrome System 5,320
AST Premium/386 90MB EGA (640x350) System 5,695
AST Premium/386 90MB VGA (800x600) System 5,995
AST Premium/386 155MB Monochrome System 6,115
AST Premium/386 155MB EGA (640x350) System 6,490
AST Premium/386 155MB VGA (800x600) System 6,785

AST Premium/286 Model 140 Base CPU $2,625
AST Premium/286 Model 80 Base CPU 1,625
AST Premium/286 Model 70 Base CPU 1,425
AST Premium/286 40MB Monochrome System 2,120
AST Premium/286 40MB EGA (640x350) System 2,495
AST Premium/286 40MB VGA (800x600) System 2,795
AST Premium/286 80MB Monochrome System 2,345
AST Premium/286 80MB EGA (640x350) System 2,730
AST Premium/286 80MB VGA (800x600) System 3,025

IBM PS/2 Model 25 Monochrome System $1,075
IBM PS/2 Model 60 w/44MB Hard Drive Base CPU 3,195
IBM PS/2 Model 80 w/44MB Hard Drive Base CPU 4,275
IBM PS/2 Model 80 w/70MB Hard Drive Base CPU 5,095
IBM PS/2 Model 80 w/115MB Hard Drive Base CPU 7,785
Victor VPC IIE 2-Floppy XT (8086) Mono System 895
Victor VPC IIE 20MB XT Mono System 1,195

LAPTOP COMPUTERS

Toshiba T1000 Single Floppy/Super Twist $795
Toshiba T1000 "768K" RAM Card 295
Toshiba T1100 Plus Dual Floppy/Super Twist 1,495
Toshiba T1200H 20MB Hard Disk/Reflective 2,325
Toshiba T1200F Dual Floppy/Reflective 1,595
Toshiba T1200FB Dual Floppy/Backlit 1,725
Toshiba T1200HB 20MB Hard Disk/Backlit 2,455
Toshiba T3100/20 20-Megabyte 3,125
Toshiba T3200 12MHz 40-Megabyte 3,845
Toshiba T5100 16MHz 80386 40-Megabyte 4,975
NEC Multispeed Dual Floppy/Supertwist 1,295
NEC Multispeed EL Dual Floppy/Backlit 1,525
NEC Multispeed EL Model 2 1,595
NEC Multispeed HD 20MB/Backlit 2,255

DOT-MATRIX/ INKJET PRINTERS

Diconix 150P Parallel Printer $369
Diconix 150S Serial Printer 425
Diconix 150 Ink Cartridge (10-Pack) 99
Diconix 300P 132-col Parallel Printer 575
Diconix 300S 132-col Serial Printer 595
Diconix 300 Ink Cartridge (10-Pack) 139
Toshiba P321SL 80-column 525
Toshiba P321SLC 80-column Color Printer 649
Toshiba P341SL 132-column 695
Toshiba P341 132-column 559
Toshiba P351SX 132-column 1,055
Okidata ML-393 132-column 450cps 969
Okidata ML-390 80-column 270cps 509
Okidata ML-391 132-column 270cps 689
Okidata ML-320 80-column 300cps 365
Okidata ML-321 132-column 300cps 519
Okidata ML-294 132-column 400cps 759
Okidata ML-294 Interface (Required) 200
Okidata Pacemark 2410 136-column 350cps 1,679
Okidata ML-292 80-column 240cps 375
Okidata ML-293 132-column 240cps 515
Okidata Interface Card for ML-292/ML-293 125
NEC P2200 80-column 355
IBM Quietwriter III 1,309
IBM Quietwriter II 955
IBM Proprinter XL24 132-column 835
IBM Proprinter X24 80-column 645
IBM Proprinter II 80-column 445
PR-HP-Paintjet 1,029
HP Deskjet 755

LASER PRINTERS/SUPPLIES

Easy Share Printer Sharing Device $635
Okidata Laserline 6 1,355
Okidata Laserline 6 Interface (Required) 200
Panasonic Laser Partner 1,765
Panasonic Laser Partner Toner 45
Panasonic Laser Partner Legal Cassette Tray 59
Panasonic Laser Partner 1MB RAM Board 325
Panasonic Laser Partner Envelope Cassette 85
HP Series II 1,725
HP Series II Toner Cartridge 115
HP Series II 1MB RAM Board 285
HP Series II 2MB RAM Board 725
Toshiba Pagelaser 12 2,525
AST Turbolaser/PS w/Postscript 2,995
NEC LC-890 w/Postscript 3,395
NEC LC-890 Toner 20

PLOTTERS

HP 7440A Color Plotter $1,045
HP 7475A A/B Size, 6-Pen 1,425
HP 7550A A/B Size, 8-Pen, Cut-Sheet 3,025
HP 7570A Draftpro C/D Size, 8-Pen, Cut-Sheet 3,075
HP 7595A Draftmaster A/E Size, 8-Pen, Cut-Sheet 7,625
HP 7596A Draftmaster II A/E Size, 8-Pen 9,165
Houston Instruments PC695A A/B Size, 4-Pen 629
Houston Instruments DMP29 A/B Size, 8-Pen 1,675
Houston Instruments DMP41 C/D Size, 1-Pen 2,275
Houston Instruments DMP42 C/D Size, 1-Pen 2,275
Houston Instruments DMP51 C/D Size, 1-Pen 2,995
Houston Instruments DMP51 MP C/D Size, 14-Pen 3,295
Houston Instruments DMP52 C/D Size, 1-Pen 3,295
Houston Instruments DMP56A A/E Size, 1-Pen 4,175
Houston Instruments DMP56C A/E Size, 1-Pen 4,325
Houston Instruments DMP61 A/D Size, 1-Pen 3,565
Houston Instruments DMP62 A/E Size, 1-Pen 4,935
Houston Instruments MP-6 Multi-Pen Upgrade 795
Houston Instruments MP-60 Multi-Pen Upgrade 750
Houston Instruments Scan-CAD for DMP50/60 2,585
Houston Instruments 1MB Buffer for DMP61/62 995
Calcomp 1023 A/D Size, 8-Pen 3,849
Calcomp 1023 1MB Buffer Board 995
Calcomp 1023 2MB Buffer Board 1,450
Calcomp 1042GT A/E Size, 8-Pen 7,589
Calcomp 1043GT A/E Size, 8-Pen 6,819
Calcomp 1044GT A/E Size, 8-Pen 11,175
Enter Computer SP600 A/B Size, 6-Pen 745
Enter Computer SP1000 A/D Size, 1-Pen (w/stand) 3,195
Enter Computer SP1800 A/D Size, 8-Pen (w/stand) 3,595

DIGITIZERS

Summasketch Plus 12x12 ..... $395
Summasketch Plus 12x18 689
Kurta Is/One 8.5x11 w/Corded Pen 345
Kurta Is/One 8.5x11 w/Corded Cursor 359
Kurta Is/One 8.5x11 w/Cordless Pen or Puck 395
Kurta Is/One 12x12 w/Corded Pen 425
Kurta Is/One 12x12 w/Corded Cursor 445
Kurta Is/One 12x12 w/Cordless Pen or Puck 479
Kurta Is/One 12x17 w/Corded Pen 665
Kurta Is/One 12x17 w/Corded Cursor 685
Kurta Is/One 12x17 w/Cordless Pen or Puck 725
MSC Technologies Omnimouse (Opto-Mechanical) 59
MSC Technologies Serial PC Mouse w/Paint 109
MSC Technologies Bus Mouse w/Paint 109
MSC Technologies Serial PC Mouse w/Autosketch 129
MSC Technologies Bus Mouse w/Autosketch 129
MSC Technologies PS/2 Serial Mouse 109
Logitech C7 Mouse 75
Logitech Hi-Rez Mouse 99
Microsoft Bus Mouse 109
Microsoft Serial Mouse 109

SCANNERS/FAX MACHINES

Microtek MS300A (sheet-fed) $1,485
Microtek MSF300C (flatbed) 1,485
Microtek MS300C (sheet-fed) 1,345
Microtek MSF300A (flatbed) 1,875
Microtek MSF300G (flatbed) 2,595
Microtek MSF400G (flatbed) 2,975
Microtek Readright OCR Software 445
Microtek Macintext OCR Software (for Macintosh) 195
Microtek Cadmate Raster-to-Vector Software 745
Microtek MFAX96P FAX Board w/Scanner Interface 745
Brother FAX-100 (Duplicates As A Copy Machine) 1,075

MODEMS/ COMMUNICATIONS SOFTWARE

US Robotics Courier HST 9600-Baud External $735
Toshiba 1200-Baud Internal for all Laptops 295
Megahertz 1200-Baud Internal for T1000 179
Megahertz 2400-Baud Internal for T1000 285
Megahertz 1200-Baud Internal for Toshiba 179
Megahertz 2400-Baud Internal for Toshiba 285
Megahertz 1200-Baud w/1MB EMS Memory for T1100+/T1200 815
Megahertz 1200-Baud w/1MB EMS Memory for T3100 815
Megahertz 1200-Baud Internal for NEC Laptops 179
Megahertz 2400-Baud Internal for NEC Laptops 285
Megahertz 1200-Baud Internal for Compaq Portable III 179
Megahertz 2400-Baud Internal for Compaq Portable III 285
NEC 300/1200 Baud Internal Modem for Laptops 349
NEC 300/1200/2400 Baud Internal Modem for Laptops 395
Complus 1200i 1200-Baud Internal Modem w/Software 59
Anchor Automation 1200i Internal w/Software 95
Anchor Automation 1200E External 165
Anchor Automation 2400i Internal w/Software 139
Anchor Automation 2400E External 185
Anchor Automation 1200PS Internal w/Software (for PS/2) 215
Anchor Automation 2400PS Internal w/Software (for PS/2) 275
★★★ALL Anchor Modems Come w/5-Year Warranty!
Everex 1200-Baud Internal Modem 95
Everex 2400-Baud Internal Modem 195
Everex 2400-Baud External Modem 195
Everex Everfax 1200-Baud External Modem w/Fax 395
Hayes 2400B w/Smartcom II 2400-Baud Internal 495
Hayes 2400B Internal 2400-Baud w/o Software 455
Hayes 1200B w/Smartcom II 1200-Baud Internal 330
Hayes 1200B Internal 2400-Baud w/o Software 289
Hayes 2400 External 2400-Baud w/o Software 495
Hayes 1200 External 1200-Baud w/o Software 330
Hayes Smartcom III Communications Software 150
Hayes Smartcom II Communications Software 95
Hayes Smartcom II Network Version 379
Carbon Copy Plus (Meridian Technology) 129

HARD DISK DRIVES/ CONTROLLERS

Plus Development Hardcard-20 ..... $559
Plus Development Hardcard-40 699
CDC 40MB (28ms) Half-Height Internal 635
CDC 40MB (28ms) Full-Height Internal 795
CDC 106MB (16ms) Half-Height ESDI Internal w/Adapter 1,385
CDC 130MB (18ms) Full-Height ESDI Internal w/Adapter 1,575
CDC 160MB (18ms) Full-Height ESDI Internal w/Adapter 1,675
Seagate ST225 20MB (65ms) Half-Height Internal (PC/XT) 215
Seagate ST225 20MB with Controller 265
Seagate ST238 30MB (65ms) Half-Height Internal (PC/XT) 235
Seagate ST238 30MB with Controller 289
Seagate ST125 20MB (38ms) Half-Height Internal 289
Seagate ST138 30MB (38ms) Half-Height Internal 325
Seagate ST138 30MB with Controller 360
Seagate ST251 40MB (39ms) Half-Height Internal 399
Seagate ST251-1 40MB (28ms) Half-Height Internal 475
Seagate ST4038 30MB (28ms) Full-Height Internal 489
Seagate ST4096 80MB (28ms) Full-Height Internal 695
Miniscribe 3650 40MB (85ms) Half-Height Internal 345
Miniscribe 3053 40MB (25ms) Half-Height Internal 549
Miniscribe 6053 40MB (28ms) Full-Height Internal 625

SCI/TECH COMPUTER STORES

"DETERMINED TO BE BEST — DESTINED TO BE FIRST"

SUPER DUPER SALE!!!

★★★PRICES CHANGE CONSTANTLY. ALWAYS CALL FOR CURRENT PRICES & AVAILABILITY.

1501 El Camino Real
Belmont, CA 94002
(415) 591-1663
Ext. 78

ELL NETWORKS

ear in business)

Miniscribe 6085 71MB (28ms) Full-Height Internal 739
Miniscribe 6128 120MB (28ms) Full-Height Internal 859
Miniscribe Scribecard 32.7MB (65ms) Internal 395
Core 90MB ESDI Internal HC for PS/2 60 & 80 2,285
Core 90MB External HC for PS/2 60 & 80 2,565
Core 150MB ESDI Internal HC for PS/2 60 & 80 3,809
Core 260MB ESDI Internal HC for PS/2 60 & 80 4,575
Core 310MB ESDI Internal HC for PS/2 60 & 80 4,950

REMOVABLE INTERNAL HARD DRIVES

Iomega Bernoulli A120H 20MB Single $1,799
Iomega Bernoulli A110H 10MB Single 1,299
Iomega Bernoulli PC3B50 Bootable Adapter 195
Syquest SQ555 44MB (Formatted) 25ms Single 1,295
Syquest SQ400 Cartridge for SQ555 105
Syquest SQ-Host Adapter for SQ555 325
Syquest SQ312RD 10MB (Formatted) 85ms Single 695
Syquest SQ200 Cartridge for SQ312RD 95

FLOPPY DRIVES

Powerhouse 1.2MB External Floppy For Toshiba Laptops....325
Powerhouse 360K External Floppy For Toshiba Laptops 295
Powerhouse 720K 3.5" External Floppy For All Computers ..295
Toshiba 360K External Floppy for Toshiba Laptops 375
Toshiba 1.2MB Internal Floppy For IBM AT or Compatibles...85
Sysgen 1.2MB/360K External For PS/2 (All Models) w/Adapter 285
Sysgen 5.25" Bridge File Controller for above 65
Sysgen 1.2MB/720K 3.5" External w/Adpater.....285
Sysgen 3.5" Bridge File Adapter for the above.....65
Fujitsu 1.44MB/720K 3.5" Internal Floppy Kit 125
Fujitsu 360K Internal Half Height - Gray Bezel 75
Fujitsu 360K Internal Half Height - Black Bezel.....75

TAPE BACK-UPS

Irwin 20MB Half-Height Internal for IBM AT.....$325
Irwin 40MB Half-Height Internal for IBM AT 455
Irwin 20MB Internal for IBM PS/2.....325
Irwin 40MB Internal for IBM PS/2.....425
Irwin 20MB External for PS/2 425
Irwin 40MB External for PS/2 555
Irwin 64MB Internal for AST Premium/286.....585
Irwin 64MB External w/Power Supply for All Computers 685
Everex Floppy 40 Internal (uses DC2000) 339
Everex Stream 40T Internal (uses CT600H Cassette) 519
Everex Stream 60T Internal (uses CT600H Cassette) 589
Everex Stream 60 Internal (uses DC600A Cartridge) 745
Everex Stream 125 Internal (uses DC600A Cartridge) 925
Everex QIC 02 Internal Tape Controller 95
Everex Stream 40T External (uses CT600H Cassette) 630
Everex Stream 60T External (used CT600H Cassette) 690
Everex Stream 60 External (uses DC600A Cartridge) 865
Everex Stream 60-8 External (uses DC600A Cartridge).....715
Everex Stream 125 External (uses DC600A Cartridge).....1,125
Everex QIC 36 External Tape Controller 225
Everex QIC 02 External Tape Controller 105

MONITORS/TERMINALS/ TV'S

Nanao Flexscan 8060s VGA (Analog/TTL).....$559
Genius Full-Page Monitor w/Adapter 1,295
Genius Squared Dual-Page Monitor w/Adapter.....1,829
Amdex 1280 Monitor w/Adapter (Identical to Wyse WY700) .675
IBM 8513 Color Monitor 575
IBM 8512 Color Monitor 495
NEC JC1402 Multisync II.....585
NEC JC1501 Multisync Plus.....875
NEC JC2001 Multisync XL.....1,995
Samsung 1453M1 EGA Monitor.....395
Samsung 1252G Monochrome Monitor 89
Sony 1303 Multiscan (800x600) 525
Quimax DM-3112 12" VGA (720x480) 415
Quimax DM-3114 14" VGA (720x480) 439
Quimax DM-12 Monochrome Monitor.....95
Wyse WY-50 Terminal with Keyboard 395
Toshiba CF2647 26" Color TV (Cable-Ready).....495

VIDEO ADAPTERS

Orchid Colorvue SE (Color Card) for Macintosh SE.....$549
Orchid Designer VGA (1024x768x16 Colors) 285
Video 7 VGA.....295
Video 7 Vega Deluxe EGA 195
Video 7 Vega EGA 155
Everex VGA 245
Everex Microenhancer Deluxe II (800x600).....165
Paradise VGA Professional.....425
Paradise VGA Plus 285
Paradise Autoswitch EGA 480 195
Paradise Autoswitch EGA 350 155
AST VGA Plus 455
AST VGA 335
AST 3G Plus II 299
AST Preview I/O Mono Graphics Adapater 189
Monochrome Graphics Adapter 59
Hercules Graphics Plus Monochrome w/Ramfont 199
Sigma Color 400H Video Adapter.....385

EXPANSION BOARDS/ ACCELERATOR BOARDS

Wyse WY-995 8-User Serial Interface $579
IBM Synchronous Data Link Communications (SDLC) Adapter 295
AST Xformer (10MHz Motherboard Replacement for Your XT) 589
AST Hotshot 286 (Upgrades Your PC/XT to 10MHz No Wait State) 489
Everex RAM 10000 EMS (LIM 4.0) w/o Memory 195
Everex RAM Deluxe 3000 EMS (LIM 4.0) w/o Memory 99
Bocaram 50/60 for PS/2 with Zero Memory (up to 4MB) 175
128K RAM Card (w/o Memory) for IBM AT Models w/512K .99
RS-232 Serial Card 29
640K RAM Card (w/o Memory) for PC/XT 39

INTEL PRODUCTS

Inboard 386/PC with 1MB RAM 975
Inboard 386/PC Piggyback Module w/1MB RAM.....615
Inboard 386/PC Piggyback Module w/2MB RAM 1,165
Inboard 386 without Memory 975
Inboard 386 w/1MB RAM.....1,385
Inboard 386 Installation Kit.....200
Inboard 386 Piggyback Module w/1MB RAM 555
Inboard 386 Piggyback Module w/2MB RAM 1,045
Above Board 2 without Memory.....275
Above Board 2 w/512K RAM.....465
Above Board 286 w/512K RAM.....405
Above Board 286 w/2MB RAM 965
Above Board PS/286 w/512K RAM 435
Above Board PS/286 w/2MB RAM 995
Above Board PS/286 Second Serial Port.....100
Above Board Piggyback Module w/512K RAM.....345
Above Board Piggyback Module w/2MB RAM 895
8087 Math Coprocessor 135
8087-2 Math Coprocessor.....165
8087-1 Math Coprocessor.....225
80287 Math Coprocessor.....195
80287-8 Math Coprocessor.....265
80287-10 Math Coprocessor.....309
80387-16 Math Coprocessor.....495
80387-20 Math Coprocessor.....725

SOFTWARE

Lotus 123 .....$295
Lotus Freelance Plus 345
Lotus Symphony (3.5" version for Laptops).....250
Lotus Metro (3.5" version for Laptops) 59
Page Perfect (Beats Ventura or Page Maker).....275
Xerox Ventura Desktop Publishing Software.....525
SCO Xenix/286 Operating System 445
SCO Xenix/286 Development System.....445
SCO Xenix/386 Operating System 515
SCO Xenix/386 Development System.....589
Laplink (for Laptops) 89
Laplink Plus 99
Desklink 129
dBase III Plus 379
dBase III Plus Lan Pack.....665
SBT Accounting Modules .....CALL
Individual Software Training for Word Perfect 59
Individual Software Directory Assistance (Beats Xtree) 49
Individual Software Professor DOS 49
Individual Software Smart Guide for DOS 29
The Office Publisher (Laser Friendly).....345
Microsoft Windows.....69
Microsoft Works 139
Microsoft PC Excel.....295
Microsoft Word 219
Dr. Halo II.....15
Formtool 69
Disk Technician.....69
Drafix 1 PLUS CAD Software 169
Word Perfect 5.0 245
Word Perfect Network 5.0.....409
Word Perfect 5.0 Network Station.....89
Word Perfect Library.....59
Word Perfect Executive.....129
Borland Quattro Spreadsheet.....135
Borland Turbo C 79
Borland Turbo Gameworks 39
Borland Eureka: The Solver 99
Borland Editor Toolbox.....39

MEMORY CHIPS

256x9 (80ns) Simm Modules.....$CALL
1MBx9 (100ns) Simm Modules .....CALL
256K Drams (All Speeds).....CALL
64K Drams (All Speeds).....CALL

NETWORK PRODUCTS

NIC Arcnet Interface Card (Up to 20MHz or more) $129
Tiara Arcnet Lancard for PS/2 469
NIC Internal 4-Port Active Hub 155
Tiara External 8-Port Active Hub 375
NIC 4-Port Passive Hub 35

NOVELL PRODUCTS

ELS Netware/286 Level I V2.0A (4 Users Maximum).....$465
Advanced Netware 86 V2.0A (for PC/XT/AT File Servers)
w/AT Keycard 1,245
w/AT G/Net Key 1,245
w/AT DCB 1,439
Advanced Netware/286 V2.0A (for AT File Servers Only)
w/AT Keycard 2,105
w/AT G/Net Keycard 2,105
w/AT DCB 2,415
Advanced Netware/286 V2.0A w/MCA Keycard (for PS/2) 2,105
SFT Netware V2.1 (for AT or PS/2 File Servers Only)
w/AT Keycard 3,665
w/AT DCB 4,049
SFT Netware/286 Level I V2.0A (for AT File Servers Only)
w/AT Keycard 2,339
w/AT G/Net Keycard 2,339
w/AT DCB 2,725
Racore 80286 10MHz Complete Workstation (512K RAM) .1,365
Racore 80286 12MHz Complete Workstation (512K RAM) .1,625
AST Premium/386 20MHz File Server w/2MB RAM, 90MB Hard Disk, Monitor, Lancard, Keyboard 6,155

BACK-UP POWER SUPPLIES/ SURGE PROTECTORS

Unisys Unipower 400.....$495
Durant BPS 300.....429
Durant BPS 500.....625
Durant BPS 550 (w/Network Interface) 665
Durant BPS 1000 1,015
Tripp Lite BC200 299
Tripp Lite BC325 355
Tripp Lite BC450 455
Tripp Lite BC750 695
Tripp Lite BC1200.....939
Tripp Lite BC2000 1,465
PTI Industries Datashield AT1500 1,615
PTI Industries Datashield AT1200 1,255
PTI Industries Datashield AT800.....815
PTI Industries Datashield AT500.....695
PTI Industries Datashield XT300 485
PTI Industries Datashield PC200.....325

SCI/TECH COMPUTER STORES

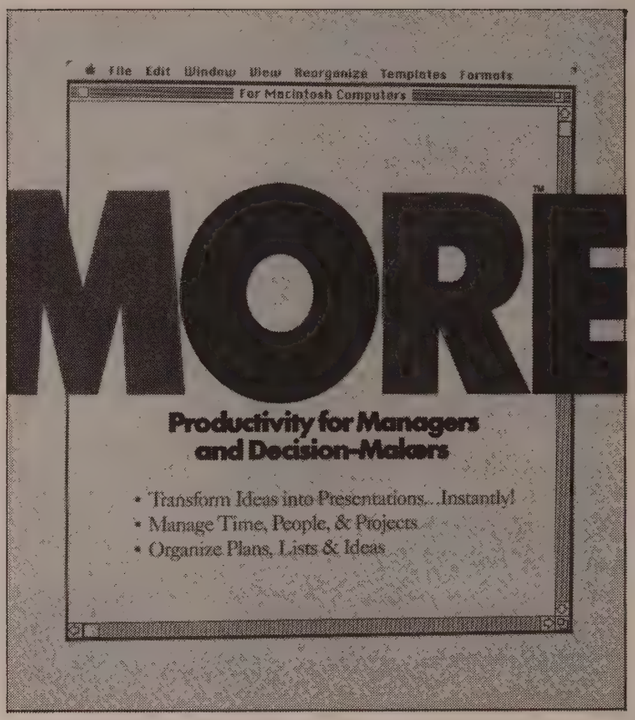
"DETERMINED TO BE BEST — DESTINED TO BE FIRST"

PC/XT/AT are registered trademarks of International Business Machines, Inc.

Store Hours:
Mon-Fri 9am-6pm

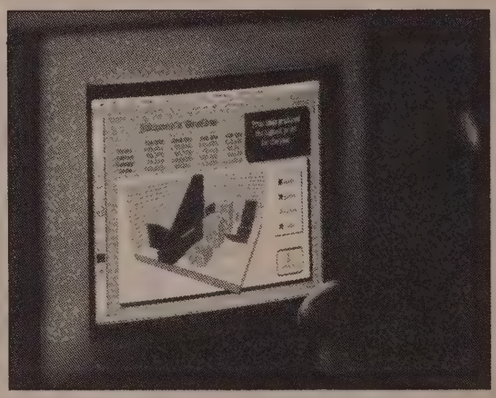
★★★PRICES CHANGE CONSTANTLY. ALWAYS CALL FOR CURRENT PRICES & AVAILABILITY.

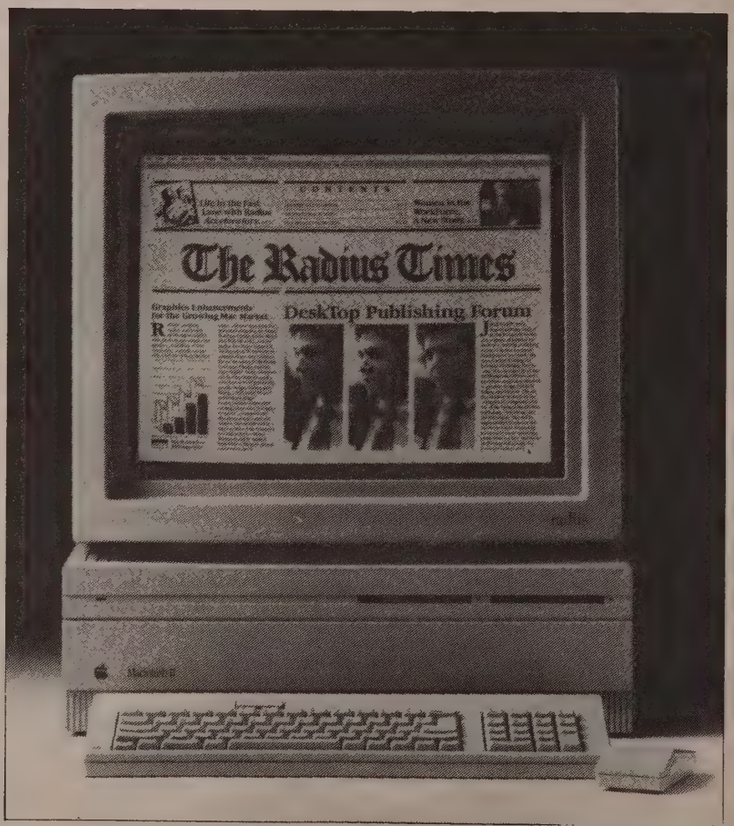
1501 El Camino Real
Belmont, CA 94002
(415) 591-1663
Ext. 78


File Edit Window View Reorganize Templates Formats
For Macintosh Computers
MORE
Productivity for Managers and Decision-Makers
• Transform Ideas into Presentations...Instantly!
• Manage Time, People, & Projects
• Organize Plans, Lists & Ideas

MORE's NetWare Compatibility Makes Group Projects Easier
MORE, an award-winning outlining and presentation program, now aids workgroup productivity by allowing individuals to more easily make contributions to a group effort. By giving all persons involved in a project access to the same files via NetWare, including those on IBM machines and compatibles, *MORE* helps users assemble presentations faster and more efficiently by reducing the need for meetings and project approvals. And it protects file confidentiality by restricting access to chosen individuals. Symantec Corp., Living Videotext Division, 117 Easy Street, Mountain View, CA 94043. (415) 964-6300.

Wingz Reads PC Lotus Files Into Mac Graphic Worksheets
Wingz is a Macintosh presentation worksheet that combines numbers, words, charts and graphic images on a single page. With NetWare 2.15 the program can create a shared workgroup environment with read/write capability for *Lotus 1-2-3* and other PC applications. *Wingz* features charting with 3-D graphics, desktop presentation capabilities and the HyperScript application development language. With "live data links," changes in worksheet data are automatically reflected in graphics and text references. Informix Sofware, Inc., 16011 College Blvd., Lenexa, Kansas 66219. (913) 492-3800.





New 19" Monochrome Monitor From Radius Aids Mac II Desktop Design
The new 19" Two Page Display System from Radius displays two 8/12"x11" pages or a B-size drawing for graphic design, page layout or engineering in black and white. Resolution is 1152 horizontal pixels by 882 vertical pixels, giving the user 30% more workspace than traditional 19" monitors. The screen is refreshed at 72 hertz. Radius includes software that provides Tear-Off Menus that can be detached from the menu bar and placed anywhere on the screen. Users can select a 12-point or 16-point menu bar for easy viewing at comfortable distances. A bit-map screen dump feature can be accessed through the standard Apple Control Panel. (Monitor: $1695; interface: $695.) Radius, Inc., 404 E. Plumeria Drive, San Jose, CA 95134. (408) 434-1010.

16 MHZ 386 - $2189
20 MHZ 386 - $2289

80386 Board with 32 bits CPU, IMB
Static-Column Ram on Memory Board **CALL**
Hard/Floppy Controller Card **$119**
1.2 MB Floppy Drive **79**
AT Type Keyboard **45**
Monographics/Printer Card **45**
Mono Amber Monitor **59**
AT Type Case/200 Watt Power Supply **115**

Seagate HARD DISK DRIVES

20 MB ST-225 w/XT Kits **$245**
20 MB ST-4026 w/XT Kits **269**
20 MB ST-125 ..... **225**
30 MB ST-238 w/XT Kits **265**
30 MB ST-4038 ..... **449**
40 MB ST-251 ..... **349**
40 MB ST-251-1 ..... **439**
40 MB ST-4053 ..... **469**
80 MB ST-4096 ..... **599**

PRINTERS

Citizen 120 D **$145**
Citizen 180 D **$173**

MONITORS

Multi-Sync Plus **$945**
Multi-Sync II **585**
Ultra Scan Color Monitor (800x560) **449**
EGA **335**
CGA **215**
Dual Scan Amber Monitor **129**
OPAL (Amber, Green) **90**

10 MHZ 286 - $889
12 MHZ 286 - $969

10/6 MHz Motherboard, 512K RAM
Expandable to 1MB **$255**
AT Type Case **55**
200 Watt Power Supply **60**
Hard/Floppy Controller Card **119**
1.2 MB Floppy Drive **79**
AT Type Keyboard **45**
Hi-Res Monographics/Printer Card **45**
Mono Amber Monitor **59**

FLOPPY DISK DRIVES

3½" 720 KB **$89**
3½" 1.44 MB **105**
Teac 360KB/1.2 MB **72/89**
Fujitsu 360KB/1.2 MB **62/79**

ADD ON BOARDS

Color Graphic Card w/Printer Port **$45**
Paradise EGA (640x350) **135**
Paradise EGA (640x480) **155**
Everex EGA (640x480) **135**
Everex Micro Enhancer Deluxe (800x600) **145**
ATI EGA WONDER **185**
Printer Card **19**
RS-232 ..... **20**
Clock Card **22**
Game Card **15**
XI I/O Card **49**
AT I/O Card **45**
1.2 M Floppy Controller **44**
AT 2nd Serial Kit **25**
2 MB EMS RAM Card XT/AT **75/85**
COPY II PC Option Board **89**
Multi Serial Card **110**

8 MHZ XT - $469
10 MHZ XT - $499

8/4.77 MHz Turbo Motherboard, 256K RAM
Expandable to 640K **$70**
XT Type Case **27**
150 Watt Power Supply **39**
360K Floppy Controller **18**
360K Floppy Drive **60**
AT Type Keyboard **45**
Hi-Res Monographics/Printer Card **49**
Mono Amber Monitor (720x348) **59**

MODEMS

1200 B Hayes Compatible **$62**
Evercom 1200B **72**
2400 B Hayes Compatible **125**

ACCESSORIES

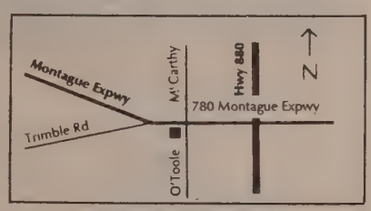
Diskette Box **$8**
Data Switch Box **19**
Mouse Pad **9**
Printer Stand **14**
CPU Stand **14**
Joystick **25**
Surge Protector **10**
Power Station **25**
Printer Cable **7**
RS-232 Cable **9**
XT (AT lookalike) Case **35**
Baby AT Case **45**
Enhanced Keyboard **55**

MOUSES

Logitech Serial Mouse **$65**
Logitech Bus Mouse **65**
Logitech HiRez Mouse **89**
Logitech Publisher Mouse **105**

MIRACLE
COMPUTERS

780 MONTAGUE EXPWY.
SUITE 202
SAN JOSE, CA 95131
TEL: **(408) 435-8177**
FAX: **(408) 435-8179**
Store Hours:
Mon-Fri **10-7** Sat **10-4**



Prices are subject to change without notice.
Not responsible for typographic errors.

Personal Information Management With IZE

By Steve Guttman

Rumors about *IZE* first surfaced about a year and a half ago, whetting the public's appetite with scraps of conversations from back rooms at COMDEX about "proprietary algorithms" and "software that could discover the underlying structure of text." And while some consider these rumors to be only clever marketing, IZE seems to be launching a new category of software, which it's christened "textbase management." In fact, its belated release has allowed competition in the form of Lotus' *Agenda* and Symantec's *GrandView* to slip into the market.

If you don't find the term "textbase management" the epitome of clarity, you're probably not alone. The goal of textbase management is to establish links, or relationships between different texts. "Texts," in the *IZE* sense of the word, means just about anything that can be expressed with alpha-numeric characters. They could be invoices, business letters, magazine articles, shopping lists, or names and addresses. They are typically in an ASCII text form, or word processor format, although this is not, strictly speaking, a requirement.

The kinds of texts that *IZE* works with best are those that can't be capably handled by a database manager—data that can't be easily cast into a field/record format. For example, most professionals keep files of business correspondence, leafing through voluminous folders whenever they need to refer to a particular project or verify a fact. Trying to catalog the letters in a conventional database is a screwy idea—they don't naturally fit into that kind of a rigid format. But organizing them in an *IZE*-style textbase is easy, and gives you nearly instant access to any particular fact or subject.

Say you've got all your project correspondence arranged together in a textbase, where each letter comprises a different text. *IZE* will let you quickly sort through and review these letters by client, by project, or even by author's middle name—you decide. This is the beauty of *IZE*—the ability to view and access information in an infinite number of ways.

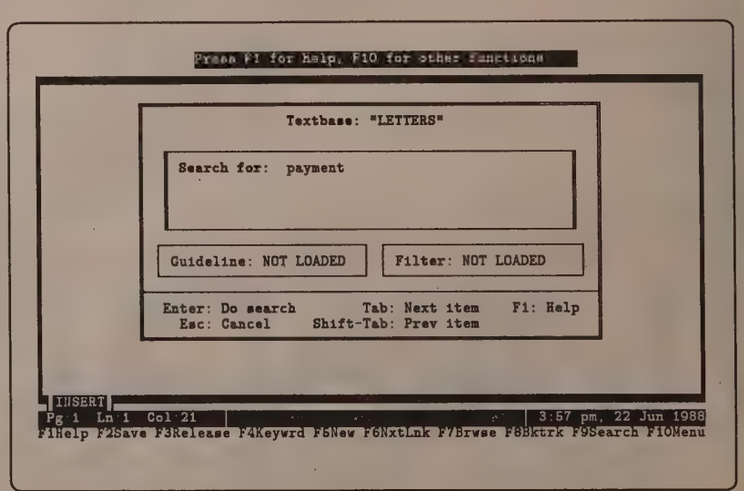
IZE seems to be the result of an unlikely union of a word processor, database package and hypertext. It has the basic capabilities of a word processor, allowing you to modify, format and print documents within your textbase. *IZE* also pretends to be a database manager, sorting and organizing your textbase as you desire. And like hypertext, *IZE* has the ability to create links allowing easy movement between disparate texts.

Data Handling

It's the analogy with a database program that really highlights *IZE*'s novel approach to information management. A text within an *IZE* textbase is similar to a record within a database—it's a repository for information. But, unlike database records, texts have no fields—they are simply groups of words, ranging from one to 32,000 characters (about 12 typed pages). Databases are sorted using keys, while *IZE* handles sorting using keywords. A keyword is simply a word or phrase which can be used to organize a textbase.

Keywords are used to designate the unique/important qualities of a particular text. Like database keys, they are used to locate a particular record, or text within a textbase. But keywords are much more flexible than keys; you can use different keywords

The goal of textbase management is to establish links, or relationships between different texts. "Texts," in the IZE sense of the word, means just about anything that can be expressed with alpha-numeric characters.



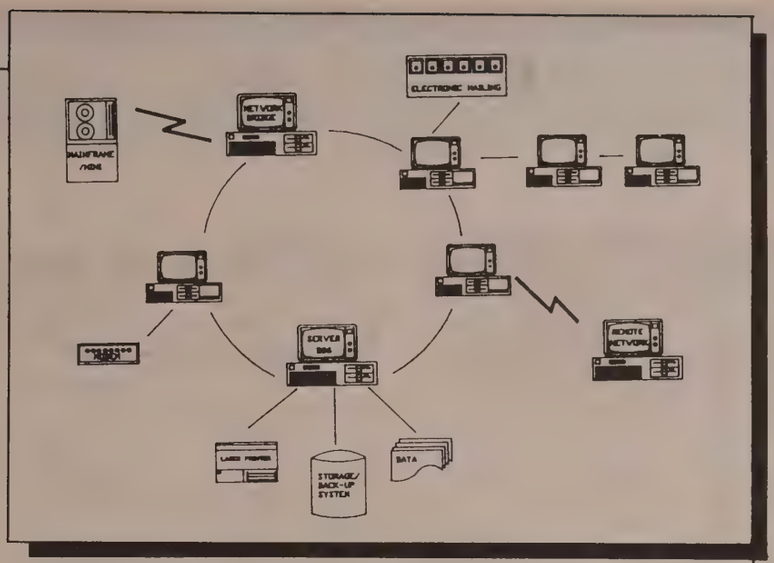
IZE will search for any string of alphanumeric characters according to user-defined criteria.

Share! Integrate! Coordinate!

The drums beat and beat.

As business gets larger, so the resources and information involve more, and so the heads of office managers' become bigger and bigger.

To LAN or not to LAN, that is not the question. The question is how and where to get the best solution.



So talk to us, hand your problems over to us:
Be it PC, Macintosh, Sun, Vax, or IBM;
Be it small and simple, or large and complicated.
To remove the mystery of connectivity for you is our specialty.

And because we know the products and markets so well that you will even find they, the budget controllers, be comfortably entertained.

A We Ease The Connectivity For You

Free consultation on LAN
Volume discounts
Installation = (1) **$35-45/hr.**
(2) Site Bidding
Training = **$200-300** (3 Hours)

For over 40 stations or SFT systems w/capacity > 200 MB, ask for DAN

B Or If You Want To Do It Yourself:

	SALE
Novell Netware Advance 2.11	$2095
Novell Netware 2.1	3595
SMC Active Hub ~~560~~	480
SMC Passive Hub	75
SMC PC-110 ARCNET Card	235
SMC ARCNET Card for PS/2	480
SMC Twisted Pair ARCNET Card	270
Ethernet Card	340
3 Com Card	410
Cable 1st 25 Ft.	23
Cable Additional Ft.	20¢

MAKING-FRIENDS SALE

CDC Wren IV
300M, 16.5 Ms **$2400**
Miniscribe 3650
40M with Disk Manager **$330**
Micropolis
Fast Hard Disk 72MB, 28 Ms **$650**
Priam V150
Full Height 40MB, 28 Ms **$480**
Seagate 251 Kit,
40MB **$370**

HI-CAP HARD DISK

Maker	Capacity (MB)	Access Time	Price ST/ESDI/SCSI
CDC	121	16.5	X/1470/1690
	155	16.5	X/1590/1740
	300	16.5	X/X/2600
Micropolis	280	18	X/2570/2760
	350	18	X/3220/3480
Priam	130	20	2190/X/X
	230	20	2350/X/X
	330	20	X/3130/X

ALLIES:

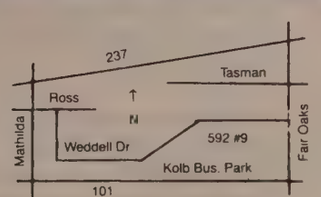
INTEL
NOVELL
3COM
EXCELAN
SMC
COMPAQ
AST

25 MHz PERFORMANCE

- Genuine Intel (SYP302)
- 80386, 25 MHz, 0 Wait
- 64K Stag RAM Cache
- 4M RAM
- Expandable to 24M
- CALL For File Server, Unix, AI Station

LINK YOUR PC-Macintosh-VAX-Apollo-IBM

NETWORK ASSOCIATES CORPORATION
592 Weddell Dr. #9
Sunnyvale, CA 94089
(408) 744-0631
Fax: **(408) 744-0639**



Our Job Is To Remove The Mystery of Connectivity For You

with different texts, and they can be easily changed. You'll want to choose keywords that clearly identify a text and "symbolize" its important ideas. For example, with texts made up of business correspondence, you might want to make keywords of the author's name, the subject, date, and addressee. In addition, you might choose some special identifying words or phrases in the text, like "eighth billing" and "send money" as keywords. You can define up to 300 keywords in a text, but generally it's best to use the minimum number that uniquely identify it.

To sort a database by keyword, use the F9 key. F9 brings up a dialogue box prompting you for a keyword, or set of keywords to search for. You can enter a single keyword, a string of keywords separated by logical (and, or, not) operators, or a "fuzzy" keyword. For fuzzy keywords, *IZE* will search for all keywords that are similar to the keyword entered. In addition, *IZE* can also perform full textbase searches for words which are not marked as keywords. A successful search returns an outline which organizes the textbase according to the search criteria.

This outline is *IZE*'s primary medium. When *IZE* finds keywords during a search, it continues looking for secondary (unspecified) keywords which the texts have in common. Upon finishing the search it organizes an outline based on the keyword being searched for, and these secondary keywords. And as you might guess, slight changes in the search criteria can lead to dramatically different outlines. These outlines are dynamic. They contain links to additional sub-outlines (for complex textbases), and links to texts containing the listed keywords. You can reach these sub-outlines or texts simply by placing the cursor on a pointer symbol within the outline, and pressing ENTER.

Word Processing/ Text Editing

Upon starting *IZE*, you find yourself in a text within *IZE*'s word processor. Normally it's the last text you worked on—*IZE* always remembers your place when exiting. The word processor is used to create and modify texts; it has standard editing functions like copy, paste, block operations, word-wrap, etc. *IZE* also allows you to make a text read-only and provides password protection.

Unfortunately, PC aficionados seem obliged to learn about 17 different word processors. *IZE*, like the others, has its own peculiar command set. But, all whining aside, these commands are no more difficult than those of any other program, and those with even meager computer skills should find themselves cursor-ing along in no time.

Texts can be imported into an *IZE* textbase from a variety of different formats, including those of most popular word processors and text editors. The DIRECT IMPORT option simply copies a text from a foreign format and converts it into an *IZE* textbase preserving most of the character formatting. For for those inclined towards the exotic, *IZE* also includes hot-linking capabilities. A hot link is a pointer to a document which remains in the format of an alien word processor. When you call up that document, (e.g. from an outline), *IZE* starts the external word processor (WordPerfect, for example), allowing you to edit your document (and mark keywords) within that environment.

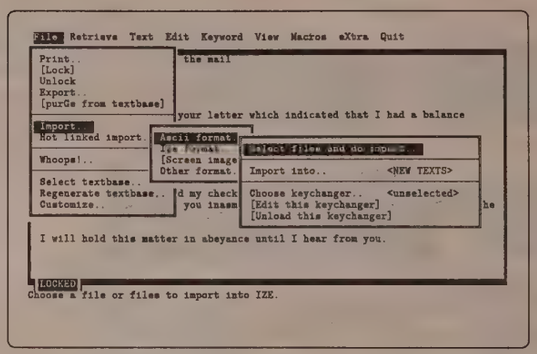
Using Keywords

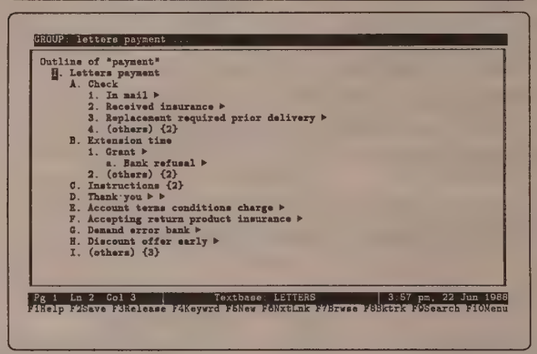
Editing within *IZE*'s word processor is straightforward, but marking keywords requires a little explanation. Keywords can be assigned in two ways: when the cursor is positioned on a word, hitting the F4 key will highlight the word, designating it as a keyword. Alternately, striking ALT-F4 pops up a dialogue box containing all keywords for the particular text. You can then add the new keyword to this list.

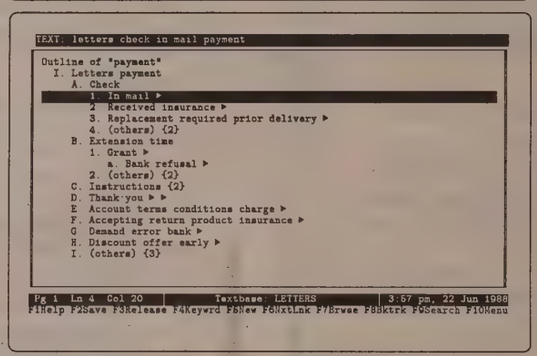
Another way of assigning or changing keywords is by using keychangers. Keychangers are an elegant and flexible way of defining keywords. You can use them to automatically mark keywords each time a text is saved, to compare words in a text against all the keywords in your textbase and mark the matches, to quickly change or delete a keyword, and a plethora of other options. Keychangers give you the flexibility of dynamically changing the way your textbase is organized at any stage in its development.

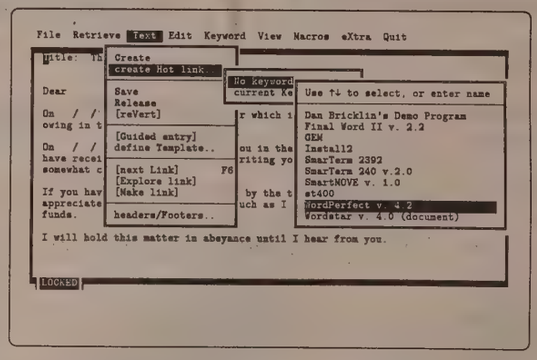
IZE's manuals (tutorial and reference) are quite good—concise and readable. The major concepts are presented clearly and without agonizing detail. And the manuals themselves are beautifully designed. But Persoft deserves a prize for the style of its packaging. *IZE*'s red, blue, yellow and black box is certainly one of the most striking on the market—you won't miss it on the shelves.

But *IZE* isn't just another pretty face. It has much more depth, and many more options than I've touched on here. And the potential applications are almost unlimited. Use *IZE* to organize a single project's correspondence, or all your correspondence with a specific client. Use *IZE* to browse through a book or manual electronically, to quickly find the sections that you're interested in. Or use *IZE* with a scanner and OCR software to scan and store magazine articles, and build a textbase of commercial information. For the myriad possibilities, as Persoft would say—just use your *IZE*. (*IZE*'s suggested retail is $445; Persoft, Inc., 465 Science Dr., Madison, Wisconsin 53711, 608 273-8227.)









IZE offers a hose of useful functions: the creation of hot links, importing text from various applications, and an outliner. It also lets you organize a variety of related texts and select the appropriate one for you particular purpose

Copyright © 1988 by Steve Guttman. All rights reserved.

HSC Halted specialties co.

SINCE 1963!

Electronic Components & Test Equip
Prototyping & Hobby Supplies
Computers, Lasers, & Optics

IBM / APPLE SOFTWARE BLOWOUT!

IBM Titles
Visi On Graph
Visi On Calc
Visi On Word
VisiCalc
VisiWord
VisiSpell
VisiTutor for VisiWord
StretchCalc
VisiSchedule
Applications Manager
Desktop/Plan
VisiFile
FlashCalc
VisiAnswer
VisiTrend/Plot

Apple Titles
FlashCalc
VisiCalc
VisiLink
VisiDex
VisiTutor for VisiCalc
VisiCalc (Advanced)
VisiFile

* VisiCorp Closeouts * **Priced from $6.95 to $12.95**

PC-LabCard for IBM AT/XT

Multi-Lab Card.....$295
(12 Bit) A/D+D/A+DIO+Counter

Super-Lab Card.....$495
(16 Bit) A/D+D/A+DIO+Counter

Digital I/O & Counter Card.....$175

Relay Actuator &
Isolated D/I Card.....$239

Prototype Development Card...$74

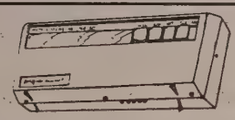
NEW!

DELTEC AC LINE CONDITIONER
400 WATT

* Ideal for you PC or Any Equipment
* Eliminates AC Line Noise and Regulates to a Constant 120VAC
* Reliable Ferroresonant Transformer
* Attractive Case with Power Cord, Outlets, and Switch/Circuit Breaker

$149.00

DISPLAY PAGING RECEIVER



* Dual Conversion Superhet 450 MHz Crystal Controlled Receiver Module (Plug-In!)
* Twenty-Char. Alpha-Numeric LED Display (ASCII Encoded, ANSI Char. Set)
* RCA CDP 1802 Processor Based Disp./Mode Controller
* Peizoelectric "Beeper" Unit
* Vibrating "Silent" Alert

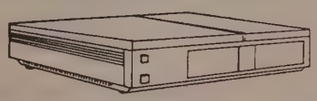
$19.95 Shipping Included
Untested - "As-Is"

AT/XT 3-SLOT MOTHERBOARD EXTENDER

* Fused Extender Card
* One 16 Bit Slot
* Two 8 Bit Slots
* Test Points for All Bus Points
* Power Connector
* Cables Included

$89.95

Great for the Experimenter!



Pioneer Laser Disc Player

These units were removed from service for upgrades. They run on 100VAC from supplied 120VAC adapter. While they should be working, some may have minor problems so we must sell them on an "As-Is" basis.

* 1-2 mW He-Ne Laser Tube
* Laser Power Supply
* 2 Front Surface Mirrors
* Two 1/2" Voice Coil Actuated Oscillating Mirrors
* One Beam Splitter
* Two Optical Lenses
* One Optical Detector
* Mini Gear Reduction Motor
* All Controlling Electronics
* Assorted Switches, Fan, Solenoid

THESE UNITS ARE OEM MODELS AND REQUIRE A COMPUTER CONTROLLER (NOT AVAILABLE FROM HALTED). THEY CANNOT BE MANUALLY CONTROLLED!

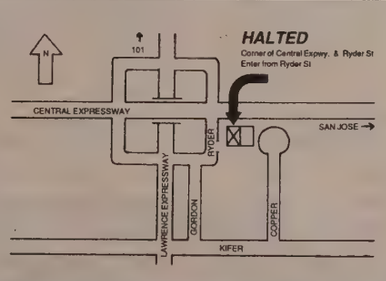
$99.00

HALTED SPECIALTIES offers it's customers Unique "SUPERMARKET STYLE" shopping for ANY and ALL ELECTRONIC NEEDS. We stock literally THOUSANDS of parts - from the newest IC's to some of the first transistors. Also, for the electronic enthusiast, we carry a full line of computer accessories, test equipment, tools, R&D supplies and much more! PLEASE CALL OR VISIT ONE OF OUR THREE RETAIL STORES TODAY!

TEAC FD-55B DISK DRIVE

* 5 1/4"
* IBM COMPATIBLE
* 360K
* 90-DAY WARRANTY

$89.95

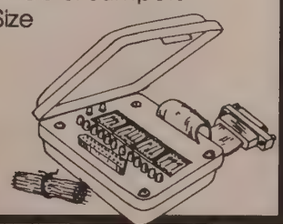


Please note NEW address, but SAME location!

NEW!

RS-232 BREAKOUT BOX

* Switchable Lines
* LED Indicators
* Patch Terminals & Jumpers
* Compact Size



$31.95

3 CONVENIENT LOCATIONS:

HSC of Santa Rosa
6819 S. Santa Rosa Ave.
Cotati, CA
(707) 792-2277

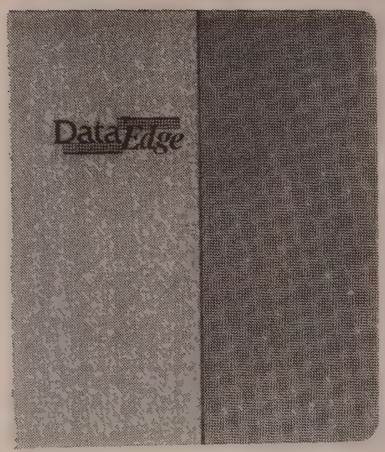
HSC of Sacramento
5549 Hemlock St.
Sacramento, CA
(916) 338-2545

3500 RYDER ST.
SANTA CLARA, CA 95051

Call NOW! CA Residents & Info 408-732-1573 Toll Free Order Line 800-4-HALTED

AMERICAN EXPRESS MasterCard VISA

TERMS: Minimum order $10. California Residents add 7% sales tax. Prepaid orders sent freight C.O.D. or call for charges. Shipping will be added to credit card and C.O.D. orders. Prepaid orders over $100 use money order or certified check. Please no not send cash. Some items limited to stock on hand. Prices subject to change.



DataEdge Version 1.6

Powerful Application Language, Difficult Design

By Steve Guttman

DataEdge is a powerful yet perplexing database manager and word processing package from PC Manager, Inc. Powerful, because its overall capabilities and features make it a match for some of the most competent PC databases. Perplexing, because its poor ergonomic design dilutes this power, making it a difficult and frustrating product to use.

DataEdge is composed of three major components: the DataEdge database manager, the PAL application developer, and the Word Manager word processor. DataEdge and PAL are both accessed from within *DataEdge*'s menuing environment. Word Manager can be run independently or from within *DataEdge*, but makes little use of its database capabilities.

Using The Database

DataEdge's features are accessed through a series of pop-up and horizontal sliding menus. These menus branch through the various database features in a structured, hierarchical way. Database novices will probably find this approach helpful; it adds a degree of user friendliness to an often inhospitable process. Experienced users, particularly fans of *dBASE's* interpretive environment, will probably be frustrated by the extra keystrokes required to execute commands—you must often backtrack through several levels of menus to get from one command to another.

Furthermore, the menu logic is inconsistent with basic PC program ergonomics. You should be able to backtrack from menu to menu along exactly the same path of commands taken in advancing. Instead of bringing you to the last command executed, *DataEdge* always backtracks to the first command in a menu. Those used to standard PC program logic will find this quite annoying. In addition, the program is not yet bulletproof. In several different situations the display froze-up when I introduced "nonsense" values as input.

One strength of this package is its rigorous password and data validation capabilities. Upon creation of a database, three levels of password protection can be specified—read only, read and alter, and complete access to all records and screen formats. When creating fields, the user can specify validation strings and ranges to be used during data input. For example, a numeric field used to enter the month of the year could be constrained to accept only numbers in the range of 1-12. In addition, a "formatted" field-type may be used which allows a data mask to be defined when the field is initialized. A mask allows fixed characters to be inserted within a field. Thus, a field holding a date string could be defined as NN-NN-NN (where the Ns stand for numeric); the dashes will automatically be included when data is entered to the field. In addition, a table-lookup feature allows data to be automatically validated against a list of acceptable values.

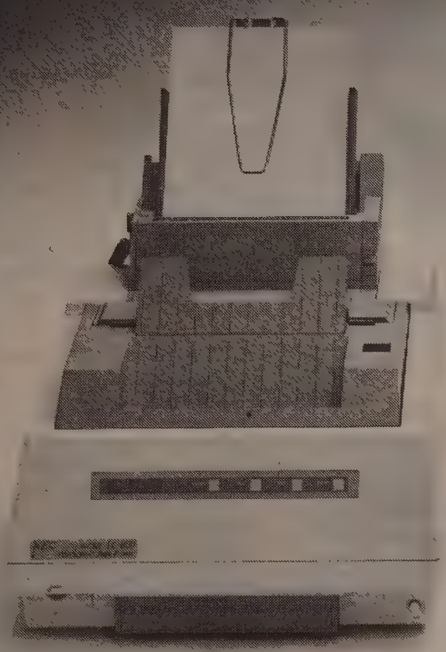
Definitions of all fields are stored within *DataEdge*'s data dictionary. The dictionary is a file containing the formats, lengths and validation strings of all fields. If a newly created database uses a field name that is identical to one previously defined in another database, the dictionary's entry is used to supply default values. This is a handy shortcut used when creating several similar or related databases.

In *DataEdge*, database fields are combined in a data entity called a "screen." A screen is basically a collection of fields and field titles that are displayed together. Each single screen permits input of only one data record. *DataEdge*'s screens are similar to the format (.fmt) files which give *dBASE III* its full screen editing capabilities, and they are especially convenient for entering data in records with many fields. *DataEdge* also includes utilities to move and arrange fields within a screen and to add ancillary text.

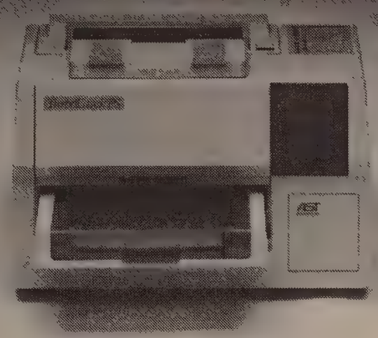
Unlike *dBASE*, full screen editing is the only mode of data entry allowed in *DataEdge*. This approach makes input easy for the person actually

Skipping back and forth between writing routines and testing them is a quick and painless experience. Programmer Application Language procedures are created using an ordinary text editor; one is provided with DataEdge, but you can configure the program to use the editor of your choice.

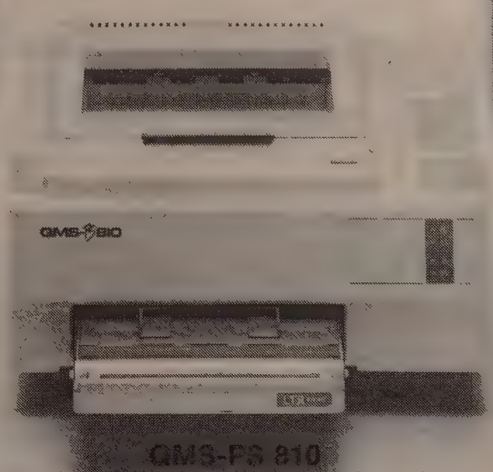
You're Invited!



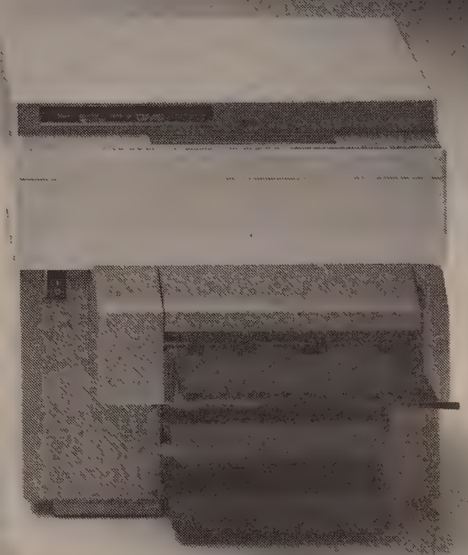
NEC LC-890
Great combination of price and performance. Reliable dual-bin NEC engine. A PC Magazine Editor's Choice (Nov. 10, 1987).



AST TURBOLASER/PS
Best Price! The most affordable PostScript printer. 3 Mb memory and a heavy-duty Ricoh 4081 engine.



QMS-PS 810
The newest PostScript printer! In stock at The Printer Works. Unique fast (16 MHz) processor and the acclaimed second-generation Canon SX engine. Crisp black type and excellent tonal range for reproduction.



QMS-PS 800 II
Extra-fast (16.67 MHz) PostScript processor combined with a heavy-duty high-capacity Canon CX-D engine. A high-volume PostScript printer with the best image quality.

POSTSCRIPT LASER PRINTERS

Visit The Printer Works and compare PostScript laser printers. Whether your computer is a Macintosh, an IBM-compatible or a Sun workstation, PostScript is a computer/printer communications standard that delivers compatibility and performance now and in the future. At The Printer Works we focus on a few high-quality products. PostScript printers meet our demanding standards. We'll help compare the best PostScript printers. And we'll help after the purchase until you have received full value and satisfaction from your printer. R.S.V.P. today!

NATIONAL SERVICE CENTER

LASER PRINTERS • DIABLO PRINTERS • PRINTER PARTS AND ACCESSORIES

THE PRINTER WORKS

3481 ARDEN ROAD • HAYWARD, CA 94545

LOCAL (415)887-6116
CALIF. (800)225-6116
U.S.A. (800)235-6116

DISCOVER CALIFORNIA'S
COMPUTER
SERVICE
PROFESSIONALS

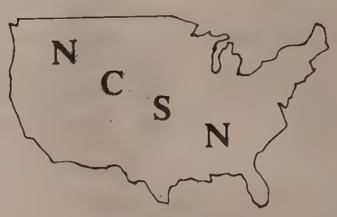
- IN HOUSE AND FIELD TECHNICAL SPECIALISTS
- VARIED MIX AND MATCH SERVICE PLANS
- STATEWIDE SERVICE AREA
- DEALER PROGRAMS
- TECHNICAL PHONE SUPPORT

Micro Computers • Laserjet Printers • Dot Matrix and Daisy Wheel Printers • Local Area Network • Video Display and Graphic Terminals • Line Printers

JOIN THE 100's OF SATISFIED CUSTOMERS TODAY!

ATS
AUTHORIZED TECHNICAL SERVICES
477 Roland Way, Oakland, CA 94621

OAKLAND
(415) 638-4449
SACRAMENTO
(916) 923-2944
ORANGE COUNTY
(714) 937-0332
LOS ANGELES
(213) 568-8862
SAN JOSE
(408) 970-9860



MEMBER OF
NATIONAL COMPUTER SERVICE NETWORK

1-800-451-4057

entering data records. But it can make creation and modification very time consuming for the database designer. And because you always have to deal with full screens containing only one record of data, it's impossible to quickly scan and edit multiple records on the same screen. This can be done quite easily in *dBASE* using the "edit" or "browse" directives. Moreover, *DataEdge*'s commands for moving among records are awkward at best. You can only move forward from the current record. To move backwards, you must go to the beginning of the file and skip forward. Furthermore, record numbers are not displayed with the records; yet another troublesome inconvenience.

Database files may be linked by means of parent/child relationships which are defined when the data entry screens are laid out. These links allow any screen to branch to records from a related file. Thus, a customer information record could be linked to records in a separate database representing customer orders.

DataEdge also includes an integrated report writer. While its capabilities are fairly basic, it does expedite the creation of simple reports, including columnar (listings of field values), forms and labels.

Application Language

DataEdge's special strength is PAL—the Programmer Application Language (not to be confused with the Paradox Application Language). PAL is a structured database language that allows the construction of external procedures which can control nearly every aspect of the database. PAL routines can be designed to execute invisibly when a database is opened or closed, during data/menu processing, and during data input for a specified field.

For example, you may have a data field in which state abbreviations are entered. You could write a PAL procedure to check the entry against a list of valid abbreviations. You can also write procedures that create or modify menus and execute external programs. PAL has a robust set of commands that give comprehensive control over the screen, keyboard and database. And while the PAL language is not for programming neophytes, the manual does have some good sample programs.

PAL is also well integrated within *DataEdge*. Skipping back and forth between writing routines and testing them is a quick and painless experience. PAL procedures are created using an ordinary text editor; one is provided with *DataEdge*, but you can configure the program to use the editor of your choice.

DataEdge's manual is only adequate. The main section describing the database itself is written as a series of tutorials. While the tutorial lessons are quite helpful, the manual desperately needs a general command reference. The section devoted to PAL does contains both tutorial lessons and a competent language reference. An on-line tutorial is also provided.

One puzzling aspect of this package is the inclusion of the Word Manager word processor. Word Manager is a reasonably full-featured program which suffers some of the same design pitfalls as *DataEdge*. Menus are often difficult to navigate, and some keystroke definitions break with PC standards. For example, instead of deleting the letter beneath the cursor, the DEL key works the same as BACKSPACE. But what's really inexplicable is that there is no synergy between the word processor and the database. Smooth integration between these two (particularly in report writing) could really enhance the functionality of this package. As it stands, the word processor is just a "bonus" you get for buying the database.

These days the best PC programs are not necessarily those that merely offer the most raw power. Top programs balance power against the ability to use it effectively; they possess good ergonomic designs. Although *DataEdge* has many advanced capabilities, its effectiveness is blunted by a poorly realized menu structure and clumsy editing commands. In fact, PC Manager seems to have thrown most of its effort into the design of the PAL language, which admittedly is nicely engineered. Unfortunately, the heart of the program is the database, and the success of the package as a whole is truly a function of its design. (PC Manager, Inc.,8229 Boone Blvd, Suite 202, Vienna, VA 22180, 703/356-4600. List price $395.)

Copyright © 1988 by Steve Guttman. All rights reserved.

COMPUTER SHOWCASE

SAN FRANCISCO'S HEADQUARTERS FOR THE AMIGA ARTS

QUESTION:
WHAT IS SLIGHTLY BIGGER THAN A BREAD-BOX, costs under $1500, creates Art, Music, Literature, Photography, Video, Image processing, Word processing, Desktop publishing, Desktop video, RayTracing animation, MIDI, Games, Accounting, and IBM compatability?

ANSWER:
The Commodore AMIGA.
We sell, support, and demonstrate these applications on the Amiga. In fact COMPUTER SHOWCASE is run on the Amiga from our Accounting system to the production of this ad. Come in and let us demonstrate our Point-of-Sale system for you!!

AND HERE IS HOW WE DO IT:

- **Informed sales.**
- **Classes.**
- **Interactive Workshops.**
- **Demonstrations.**
- **Open lab.**
- **Art Gallery.**

AND HERE IS WHAT WE SELL:
Complete Amiga systems, software, hardware, digitizers, printers, cameras, memory, et.al.

OPENING JULY 11

2739 Geary Blvd.
(at Masonic) (415) 563-1953

WORKSHOPS

VIDEO WORKSHOPS:
every Friday 5-8 PM. Bring your project or start one here. JULY SPECIAL $30.

IMAGE PROCESSING:
every Wednesday 5-7 PM. Video Digitizing and paint programs. JULY SPECIAL $25.

CLASSES

DESKTOP PUBLISHING & LASER PRINTING: Professional Page layout software. Sat. July 16 11-2 pm $40

IBM COMPATABILITY & THE A-2000 BRIDGEBOARD:
Tues. July 19 5-7 pm $25

INTRODUCTION TO THE AMIGA & WORD PROCESSING: Sat. July 23 10-12 $25
(free with system purchase)

AMIGA MUSIC: Sat. July 30 1-5 pm. MIDI, music software & synthesizers. $50

VIDEO ON THE AMIGA- An introduction;
Sat. Aug 6, 10-2 $50

Space is limited so sign up early!

FREE DEMONSTRATIONS

PRINTERS FROM DOTS TO LASERS;
Sat. July 16, 2-4pm

HARD DRIVE SEMINAR:
Sat. Aug. 6, 2-4 pm

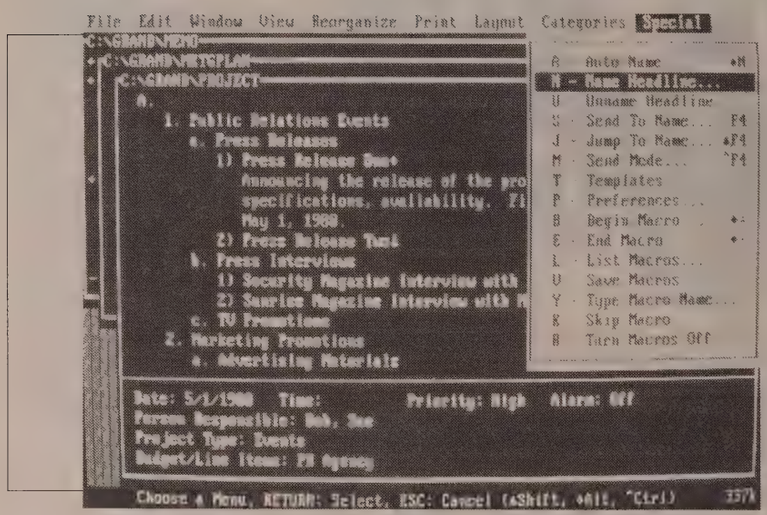
AMIGA LIVE! Sat. Aug. 13. 11-2 pm.

This ad was produced using Word Perfect, Amiga Live!, Digi-View and Deluxe Paint. It was assembled using Professional Page and printed on an Allied Linotronic 100 at:
Giraffe-X Desktop Publishing (1826 Divisadero St. SF 346-9166)

GrandView

Great Outliner Takes On Personal Information Management

By Birrell Walsh


File Edit Window View Reorganize Print Layout Categories Special
1. Public Relations Events
a. Press Releases
1) Press Release Due
2) Press Release Text
b. Press Interviews
c. TV Promotions
2. Marketing Promotions
a. Advertising Materials
Date: 5/1/1988 Time: Priority: High Alarm: Off
Project Type: Events
Choose a Menu, RETURN: Select, ESC: Cancel (&Shift, &Alt, ^Ctrl)

GrandView offers sophisticated outlining capabilities and permits the use of multiple windows.

I've been looking forward to *GrandView*, because Symantec is the leading maker of outliners. *GrandView* is both an outliner and Symantec's first venture into the world of Personal Information Managers. The good news is that Symantec has given us the best outliner yet. The bad news: the personal information manager is resolutely so-so.

Outlining Power

"Outliners" are the software which simulate the outlines we used to make in third grade for Mrs. McCurdy. They have headlines and subheadlines, each neatly marked with numbers and letters to help us keep track of our topics. In outliner software, the topics are movable from one heading to another, and the headlines often have large blocks of text attached. Much of the usefulness of the outline is the ease of reorganizing.

People like different features in outliners. For me, outliners are a way to keep track of a lot of text. I want to be able to write letters, articles, notes for articles, names and addresses. Therefore I want no distinction between the headline and the text that follows it. If there is no such distinction, I can use each outline heading as a paragraph. For some people the focus is the headline. Perhaps they intend to make bullet charts out of the result. For their uses it is very important that the headline be distinct from the text which follows it.

GrandView lets the user choose. With "Document View," you have the text below the headline as a separate document. You work on it as if you were working in a stand-alone word-processor. In "Outline View," the headline is only the first line of the text. You can write a document in this "View," and then remove the outline numbers or letters to leave a finished document.

GrandView's outliner comes by its excellence naturally. It is published by Symantec, the publishers of *ThinkTank*, *More* and *Ready*. It was written by John Friend, the author of the superb *PC Outline*, published by Brown Bag Software. Features and customs of usage from both products have been incorporated into *GrandView*. I can export my work in *GrandView* to all of Symantec's products, *WordStar* and ASCII—although I cannot export to *PC Outline*.

GrandView has the menu style familiar to the users of *PC Outline* — drop-down menus whose commands can also be triggered with a slash followed by the first initial of the command desired. One can reach most commands with a slash and two letters, although some require a more complex sub-menu. Different from *PC Outline* is the cut-and-paste style: the block to be cut, moved or copied is marked separately from the operation to be performed on it.

GrandView permits multiple windows. The multiple windows let me open up to nine outlines at once. I can stop in the middle of a writing project to look up a name and address in another outline, and then leave the second or third window on the screen while returning to the writing.

There are multiple outline labels styles available. You can use *ThinkTank*'s style ("+" at the beginning of a headline which has subheadlines; "-" at the beginning of others. Others available are Harvard ("I.A.2 ii"), Legal("1.1.5"), Bullet ("~"), All Numeric, Vertical Lines which bracket groups at the same sublevel, Indentation only and Plain Text. The latter is wonderful for a writer. After you have written an essay in outline format, you can remove the outline numbering and

GrandView is altogether a remarkable outliner. It has already weaned me from PC Outline, which I have used for two years. If you want an outliner, get this one.

AMERICAN DIGITAL DISCOUNT ASSOCIATION

SUPER iXT SYSTEM

SUPER iXT/10MHz SYSTEM

- 1 Floppy Drive
- Ser., par., clock, game port
- CPU V-20 Chip (SI=3.7 approx.)
- Monochrome Monitor, Video Card with 0K Memory
- W/20MB Hard Disk & Controller

$749

Super iAT/12.5 MHz System

Super iAT/12.5 MHz System

• 0 or 1 wait state • 1.2 MB floppy drive • 40 MB hard disk (39 ms) • Hard disk and floppy drive controller • Monochrome monitor • Video card w/printer port • With 0K memory • 101 enhanced keyboard

$1295

please call for Super iAT 20 MHz

TOSHIBA LAPTOP-3120

ACER 1100

CPU-Intel 386
16MHz Clock Speed
1.2 Mb Floppy Drive
40 Mb High Performance Hard Disk

$CALL

TAPE BACKUP SYSTEM

ARCHIVE 60Mb Tape Backup
Self Contained & Menu Driven Image & File by File Backup • PC/XT, AT & Compatibles
Quick Data Format

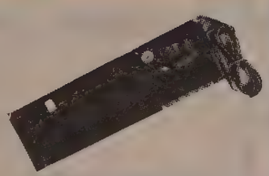
Internal **$495**
External **$595**
40MB Tape Backup. **$325**

MODEMS

1200 Baud Internal **$89**
Fully Hayes Compatible

ADDA 2400 Baud Internal
w/ProCom Software
Support Com 1 - Com 4
Made in U.S.A. **$139**

U.S. Robotics 2400 Baud
Internal w/BitCom Software
Made in U.S.A. **$169**



EGA MONITOR

TAXAN 770 Multivision
14" Screen, 800x600 . . . . . **$CALL**

TAXAN 765 Monitor
14" Screen, 650x350 **$395**

TATUNG cm-1495
Multi-Syn. Monitor
13" Screen, 800x560 **$495**

EGA CARD

800x600 EGA PLUS
Autoswitch Capability, 800x600, 132 Col EGA, CGA, MGA, VGA,
Mode 11 & 12 . . . . . **$165**

ATI NEW ENHANCED CARD
Auto-switch Capability, 800x560, 132 Column emulation supports VGA, EGA, MGA, CGA **$195**

RGB MONITOR

CGA Spec.
640x200
Resolution.

TAXAN 720 . . . . . **$275**
ADDA RGB **$245**

PRINTERS

240cps in Dot Matrix. 50cps in Near Letter Quality. Epsen 286 Compatible Tractor & Friction Feed.

FORTIS DM2015 - 132 Col. **$395**
FORTIS DM2010 - 80 Col. **$345**
DM1310 130cps, 80 Col. **$199**

HARD DRIVE for PC/XT

20 Mb w/Controller **$275**
30 Mb w/Controller **$325**
80 Mb w/Controller **$795**
100 Mb w/Controller **$1495**

HARD DRIVE for PC/AT

20 Mb ST-125 (28mS) . . . . . **$CALL**
30 Mb ST-138 (28mS) . . . . . **$CALL**
40 Mb By Seagate (39mS) **$425**
40 Mb ST 251-1 (28mS) **$475**
80 Mb By Seagate **$695**
120 Mb By Maxtor, 25mS **CALL**

TTL MONO MONITOR

TTL MONOCHROME MONITOR
Samsung Flat Screen Monitor
14" Screen, Flat Screen **$115**

ADDA TTL MONITOR $89
12", hi-res

SPECIAL OF THE MONTH

U.S. Robotics

1200 Baud Internal Modem
w/Bitcom Software

$75

EMS CARD

0K Expandable to 2.5 Mb
Supports EMS Standard
Works with Lotus Release 2 Etc. w/Software

For AT **$89**
D-RAM 41256 **$ Call**

ADD-ON CARDS

Mono Graphic/Printer Port **$49**
Color Graphics Card **$49**
CGD & MGD Combo Card **$69**
AT FD&HD Controller
WA2 (E044) Compatible **$125**
XT Multi-I/O Card **$69**
XT Mini-I/O Card **$59**
AT Mini-I/O Card **$69**

LASER PRINTER

LASER PRINTER
By HP
Laser II

$CALL

PC XT/AT KEYBOARD

KEYBOARDS for IBM PC/XT, AT

Enhanced AT Keyboard **$49**

FLOPPY DISK DRIVES

XT-360K **$79**
AT-1.2 Mb **$99**
AT/XT-3½" 720K **$99**
AT/XT 3½", 1.44K **$125**

POWER SUPPLY

Uninterruptable Pwr Supply
Power Failure Interrupt Signal to Computer
Back-up Power for 15 Min.
Noise Surpression & Surge Protection

500 Watt **$ Call**

POWER SUPPLY

150 Watt Power Supply
For PC/XT **$49**

200 Watt Power Supply
For PC/Baby AT **$69**

200 Watt Power Supply
For PC/AT **$79**

SYSTEM SOFTWARE

(New)
MS DOS 3.3
w/GW BASIC
$ Call

New Case

IBM Model 50
Compatible Case
$CALL

IBM MODEL 80
Compatible Case w/270W Power Supply
$CALL

ACCESSORIES

8087 Chip	$ Call
80287 Chip	$ Call
Printer Cable	$12.00
2-Way Data-Switch Box	$29.00
3-Way Data-Switch Box	$39.00
Power Directory	$39.00
Power Directory with Modem Protection	$69.00

Prompt delivery, usually shipment within 48 hours (except personal check orders). We welcome major educational institutions and government agencies to establish open accounts (P/O) status with us to facilitate shipment of orders. Write or call for details.

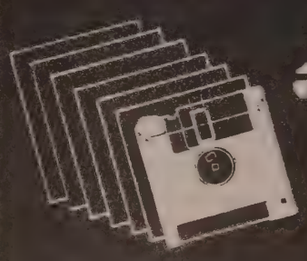
Prices quoted above do not include UPS shipment charges.
Prices subject to change without notice.
California residents add 6½% sales tax.
Mastercard or Visa add 3%

Business hours: Mon.-Sat. 8:30am - 5:30pm

IBM PC is a registered trade mark of IBM Corp.
TAXAN is a registered trade mark of TAXAN Corp.

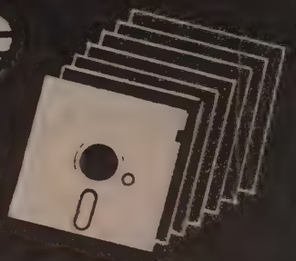
©1987, American Digital Discount Association

AMERICAN DIGITAL DISCOUNT ASSOCIATION, INC.
In Torrance
4040 Spencer St., #M
Torrance, CA 90503
(213) 542-3578



AMERICAL GROUP

The Diskette Company



100% ERROR FREE • LIFETIME WARRANTY • U.S. MAJOR MANUFACTURERS

25¢
QTY. 200
5¼" DS/DD
100 ERROR FREE
with Paper Sleeves 27¢ ea.
with Tyvec Sleeves 29¢ ea.

$35.00
5¼" DS/DD
IN WHITE BOX
DISKETTES ARE IN BOXES OF 10
INC: ANTISTATIC SLEEVES, LABELS, TABS.
(MIN 100 DISKS OR 10 BOXES)
Special: Lots of 350 30¢ Ea.

32¢
5¼" DS/DD
INC: TYVEC SLEEVES, LABELS, TABS
IN PACK OF 10, BOX OF 100
STANDARD PRODUCT
MIN 100

45¢
COLOR
5¼" DS/DD
UP TO 16 DIFFERENT COLORS
INC.: Tyvec Sleeves, Color Coded Labels and Tabs. Rainbow Pack available. Colors: L.Blue M. Blue, D. Blue, Gray, Red, Pink, Brown, Beige Burgundy, Yellow, White, Orange, Green, Lavender, Silver* & Gold

$1.10
MIN 25 EA
3½" DS/DD
LIFETIME WARRANTY
100% ERROR FREE
3½" DS/DD IN WHITE BOXES W/LABELS
12.50 BOX OF 10
3½" DS/DD IN PLASTIC BOXES W/LABELS
13.80 BOX OF 10

MIN 30 **90¢** EA
5¼" DS/HD
High Density For IBM AT and Comp.
INC.: Tyvec sleeves, Color Coded Labels and Tabs
IN 12 DIFF. COLORS
D. Blue, Red, Pink, Brown, L. Blue, Gray, Burgundy, Yellow, White, Orange, Green, Lavender
In Black Color 69¢

3½"DS/HD 1.44 MB DISK FOR IBM™ PS/2 **3.75 EA** Min.10

3 ½ "Floppy Disk Drive 720K Capacity $ 119.00 / 1.44 MB Capacity $139.00

DISK STORAGE
DD 100 Holds 100 5 ¼" w/Lock $8.95
DD 120 Holds 120 5 ¼" w/Lock $11.95
SS40 Holds 40 3 ½" $6.95
SS80 Holds 80 3 ½" $10.95

Nashua

	Box of 10
5¼" DS DD	$5.10
5¼" DS HD	9.95
3½" DS DD	13.80

DATA CARTRIDGES

DC600A	22.25
DC2000	17.90

Verbatim — A Kodak Company — ***DataLifePlus***

5¼" DS/DD $9.85 BOX
DATALIFE PLUS
TEFLON PROTECTED
5¼" DS/DD $7.95 BOX
5¼" DS/HD $14.30 BOX
3½" DS/DD $14.90 BOX
3½" DS/HD $44.00 BOX

BONUS™

3½" DS/DD	$13.50
5¼" DS/DD	$4.90
5¼" DS/HD	$11.60

wabash DATATECH

3½" DS/DD	$11.50
5¼" DS/HD	$9.95

SAME DAY SHIPPING
Dealer Quantity Prices Available
(818) 765-3040

VISA, MC, COD, Pick Up or
Send your order with check to:
AMERICAL GROUP
14200 Ventura Blvd., suite 201
Sherman Oaks, CA 91423

1. Purchase orders accepted from Fortune 500 Firms, colleges, school, government and state organizations. min purch. order $50 +10% on above prices.
2. Every product fully warranteed through Americal Group
3. On large orders- CALL US FOR A QUOTE
4. APO + FPO shipping charges: are 15% of purch. min. $6.00

ADD $4.00 shipping for first 100 Disks and $1.00 every 100 thereafter
Calif. Residents ADD 6 1/2 % sales tax.
FAX # (818) 765-3887

indentation (like the bones from a fish) by choosing a "plain text" style before printing. The outline structure is not lost, but it is invisible under this style. Lovely feature!

"Send" and "Jump" are two features that must come from the Symantec side of the family, because they are not familiar to me as a *PC Outline* user. You can "Name" any headline with a name of up to twelve characters, or let *GrandView* do it. Thereafter you can tap F4 to "Send" the current heading to become a subheading of one of the named headlines (the choices appear on a pop-up menu), or use "Shift-F4" to jump the cursor and yourself to the named headline. With this feature you can quickly distribute a list of headings to other headings. You can move all of today's items to "Done" or to "Tomorrow." There is even a "Send Mode" which keeps the send mode open for a number of items, so you do not need to use F4 each time.

I was delighted to find 40 printer-drivers included with *GrandView*. If you have an unusual printer—I didn't know an HP LaserJet II was unusual until I got one—you will be delighted to find that *GrandView* supports a large selection. Someday someone will standardize printers in the DOS world. Until then, it is pleasant to find manufacturers who provide for the diversity of needs. You will also be pleased to know that you can change font and type-sizes right in the middle of a line, and switch back again in the same line.

One sign that Symantec wants to make a clean sweep of the outliner market is the "/Special Preferences" command. With it you can customize *GrandView* in a number of ways. You can decide if you want hard carriage returns and tabs displayed or not. You can have the formatting tags (used to change type sizes and fonts) displayed or not. You can arrange the frequency with which *GrandView* automatically saves an outline, and whether it writes over the original file when doing so. You can choose to display dimensions in inches or centimeters. You can probably make *GrandView* very much like any outliner you already know. Did I mention the Spelling Checker with an expandable dictionary?

It is altogether a remarkable outliner. *GrandView* has already weaned me from *PC Outline*, which I have used for two years. If you want an outliner, get this one.

Toward A Perfect Personal Information Manager

Since no one else has successfully defined a "Personal Information Manager," let me take a try. A Personal Information Manager is an Expert System for daily life. More specifically, it is an application with an automatic cross-referencer on top. The application can be a financial database (like *Javelin*), a word processor, an outliner (like *GrandView*), a database (like *AskSam*), or a note-taker (as Lotus' *Agenda* is said to be). The ACR (Automatic Cross Referencer) will keep track of all the items which have certain keywords or dates in them, and then let you look at all your information by those categories. Most categories have two layers at least—you can have a category of "People Responsible," and then have subheadings "Joe" and "Olive" and "Rob." The ACR allows you to take alternative looks at your data by keeping it ordered under different headings. The automatic part is that the cross-referencer can be set to observe as you enter or import data, and to cross-reference automatically. So, to multiply jargon, a PIM is an application with ACR. The tests I would use for such a program are these:

1) It will be very good with dates, recognizing and dealing with dates and date-words (like "tomorrow" and "next week"). If I enter an item today, marked for action tomorrow, it will show it to me tomorrow as today's work. Even though that sentence confuses us, it shouldn't confuse the ACR. Very subtle date manipulation is exactly what a computer is good for. I want it to be able to figure out "the third Tuesday of each month."

2) It will allow categories to unlimited depths. An outliner has unlimited depths. You can have headings, subheadings, sub-subheadings to those, and so on. Every category in the ACR should have potentially indefinite depth. Above "Joe," "Olive" and "Rob," you should have potentially unlimited super-categories. You also want to be able to make many categories for each entry ("Rob" may be in the category "Cast Members" in a play, as well as in "Persons Responsible" in the business). So we want an unlimited number of unlimited outlines above (and below) the data you enter.

3) You should be able to let the ACR

Prescription for those ol' accounting Blues:

COMMON CENTS

An accounting system written in modifiable dBase III+ source code

Don't let the Blues get you down. The Blues you get when you pay the high price of other accounting software only to face the additional cost of custom program modification. Common Cents Accounting is loaded with the high powered features you would expect to see in a fine accounting series but lacks the high pricetag.

Common Cents grows as you grow. Start with one module and add other modules at any time. Many of our customers use one or more of the Common Cents modules to integrate with their own custom application programs.

Don't spend your time trying to reinvent the wheel. And don't think you have to spend a small fortune to get quality accounting software. Common Cents is your logical choice.

It cost more than he imagined.

Powerful, flexible, modifiable dBase III+ Source Code included.

Dealer and VAR inquiries welcome.

Please include $6.00 for shipping. CA residents add tax. Orders outside the U.S. must be prepaid.

New !!

Multi user version now available. Take advantage of our introductory pricing.

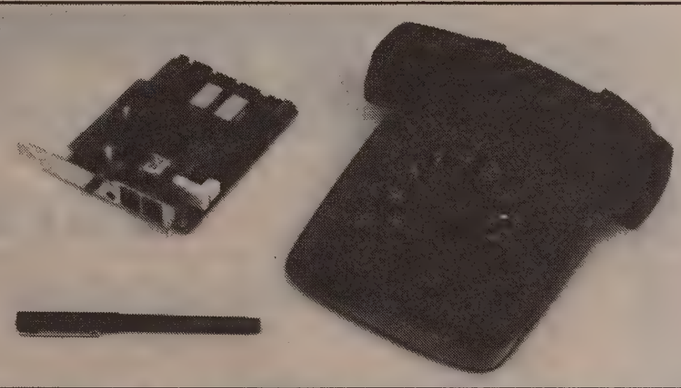
Point of Sale Module. Like all of our other modules, this one integrates with the General Ledger as well as the other supporting modules. $89.95

Modules	Single user	Multi user
General Ledger	$69.95	$89.95
Accounts Payable	$69.95	$89.95
Payroll	$69.95	$89.95
Accounts Receivable	$89.95	$110.00

Includes Sales & Invoicing, Order Entry, Inventory, POs

Reference Appendices	$10.00
Clipper Help Disk	$15.00
System Demo Disk	$15.00

Common Cents Software; 5815 Watt Avenue.#202; North Highlands, CA 95660
(916) 344-8519



$95 2400 BAUD MODEM
30 DAY FREE TRIAL !

WE AREN'T KIDDING....We provide high quality products at the lowest possible cost. To our knowledge this is the lowest priced 2400 baud autospeed select modem available; yet no compromise is made in performance or features. Advanced communications algorithms and digital signal processing technologies avail this low cost high preformance device. The design, based on the Texas Instrument chip set, offers Hayes compatibility on an IBM PC internal half card. Advanced features, e.g. automatic adaptive telephone line equalization, allow reliable performance over substandard telephone circuits, insuring data integrity. We manufacture our products in the USA and sell them directly to you; there are no middlemen. This keeps your cost low. We guarantee we will not be undersold! If you find a lower advertised price for the equivalent product, we will equal that price and award a bonus of the difference! The CCC 2400 is a superb performer and an incredible value. It offers all the features you would ever expect. If you aren't totally satisfied, you may return it within 30 days for a full refund. Everybody is going 2400 baud. Why not you??? SAVE TIME! SAVE MONEY! Software is included. Offer good for a limited time.

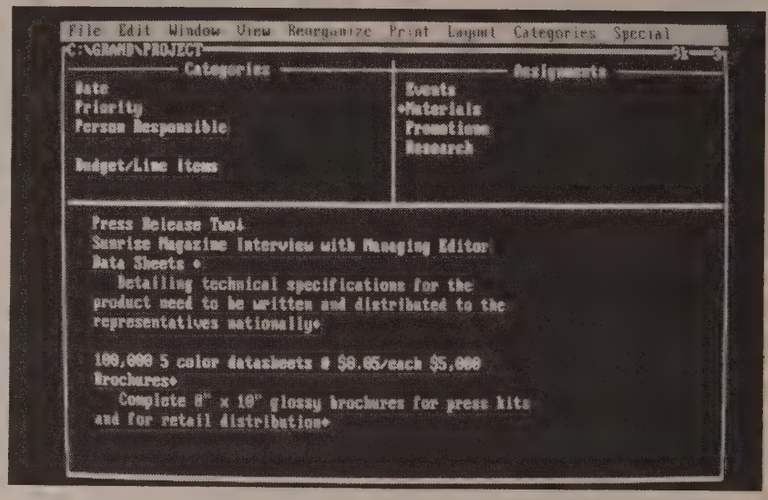
(800) ACT ON IT **CompuCom Corporation** (408) 732-4500

work with any combination of these levels. That is simple logical work, and databases have done it for years. For instance, if someone is listed in "Members" and is not listed in "People Responsible," I want to be able to find them with some variant of [in "Members" and not in "People Responsible"].

4) It should be very easy and should take few key-strokes to program the ACR. The whole point of a Personal Information Manager is to make it easy to rearrange information. You want to be able to try out various combinations. An easy ACR facilitates that creativity. A laborious ACR will get dutiful but not willing use, and be about as much fun as COBOL.

5) "Views," as PIMs are calling alternative views of information, should be designable to show any combination of categories in any format. You may need a daily to-do sheet that begins with a statement of your long-term goals, then the current projects, then all tasks assigned for today from any category, sorted in the order of priority. This view will draw from a number of different categories. Again: if a database can do this kind of report, why can't a PIM?

6) Finally, the PIM needs to be on top of a good fundamental application. The finest ACR would be useless on top of a flimsy application.



The Personal Information Manager lets you organize a variety of information for your particular needs.

GrandView As A Personal Information Manager

If you want a "Personal Information Manager," *GrandView* is not quite the ticket. Alas, *GrandView* does not do well by the standards I want a PIM to meet.

LOOK AT THIS!

Turbo Sale

Turbo 8088 System
4.77/8MHz Switchable
256K on Board
360K Floppy Drive w/Controller
Keyboard
150W Power Supply
Monographic Card w/Printer Port
1 Year Limited Warranty
$379

Turbo 286 System
6/10 MHz 0 Wait
512K RAM on 1MB Board
Real Time Clock, Calendar
1.2MB Floppy Drive w/Controller
220W Power Supply
Keyboard
Monographic w/Printer Port
Western Digital FD/HD Controller
1 Year Limited Warranty
$875

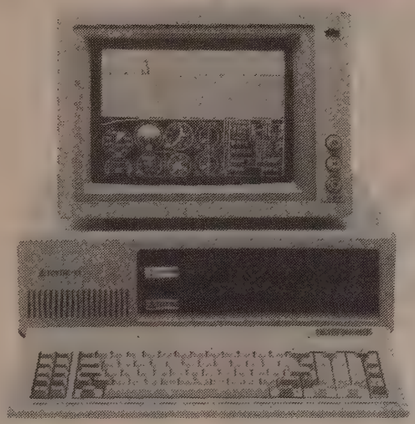
Letter Quality Printer $169

Hi-Resolution Monitor $74

Fax Machines & Copiers from $50/month to lease

COMPUTER DISCOUNT CLUB
4600 El Camino Real, Los Altos, CA 94022
Hours: 10am-10pm, 7 days a week!
(415) 941-3355
Fax (415) 941-7318

TOP VALUE
FROM TOPTEK



Runs Twice As Fast As 8088 CPU

8088/80286 Compatible System

Includes: 8 MHz (10 MHz optional) • Turbo Motherboard • 150W Power Supply • Floppy Disk Drive • Monochrome Graphic Card w/Port • Keyboard • Monitor

Only $499 Orig. $799

10 MHZ 80286 SYSTEM

Includes: 10 MHz Turbo Motherboard • 200W Power Supply • HDC/FDC • Keyboard • 1.2 Mb Drive • FCC Approved • Monitor

Only $849 Orig. $1599

386 Also Available

Star NX 1000 only $185 List $350

NEC P2200 (24 pin) only $354 List $599

Logitech C7 Mouse

List $99 Only $67

1200B Internal Modem Hayes Compatible

List $129 Only $59.95

Citizen 120D Printer

List $249 Only $159

Add On Products for HP Laser Jet Series II

Memory Expansion Card w/1MB on Board . $369
Font Cartridges. . . . . Call
Toners 95.95

PRINTERS & SUPPLIES

HP Laser Series II	$1625
Epson LX 800	199
Epson FX 86E	329
Epson FX 286E	459
Epson EX 1000	525
Epson LQ 500	349
Citizen 180D	185
Citizen MSP-10	285
Citizen MSP-15	349
Cables	7.95
Printer Stands	8.95
All printer ribbons available	Call

CARDS & BOARDS

640K Motherboard	$85
Turbo Motherboard 10MHz	89
Motherboard	269
Color Graphic Card	45
Mono Graphic Card w/Printer Port	55
EGA Card (Autoswitch)	129
Disk I/O Card	62

REPAIR & UPGRADES

Fastest Turnaround
Lowest Rates
AT&T, IBM, & All Name Brand Products

SEMINARS

How To Build Your Own Personal Computer
Learn DOS Operation & Basic
Troubleshooting Skills $25 per person

Saturday at 10:00 AM

HARD DISKS & CHIPS

4164	$Call
41256	for
8087	the
80287	best
Seagate 4038/251	prices!

MISCELLANEOUS

200W Power Supply	$75
150W Power Supply	55
Surge Protector	9.50
UPS (Uninteruptable Power Supply)	225
Tape Back Up	Call
EGA Monitor	349
Mono Monitor	85

1520 Taraval St.
(between 25th & 26th)
San Francisco, CA 94116

TOPTEK
MICRO CENTER INC.
(415) 564-3500

Office Hours
Mon-Fri: 10-7
Sat: 10-5

ON SITE SERVICE & PROFESSIONAL CONSULTING AVAILABLE • DEALER INQUIRIES WELCOME

Price subject to change without notice.

Hayes is a registered trademark of Hayes Microcomputer Products.

LIGHTNING SPEED!!!!

20 MHz 286 AT™ SYSTEM BOARDS

Samples Are Available At Only $319

SPECIFICATIONS:

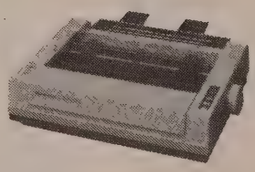
- Intel 286 Base Running At 15 MHz With 0 Wait State
- High/Low Speed Can Be Selected Softwarely Through Keyboard
- I/O Speed Is Selectable In Between High/Low System Clock Rate
- System Board Equipped With Eighty Expansion Slots of 16/8 Bit Bus
- Rechargeable Battery, Real Time Clock
- Jumpers For Speed, Power Indicators Hardware Reset Connector
- Memory Can Be Configured To 256K, 512K, 640K or 640/384K

Require 80ns or faster DRAM

PERFORMANCE:

	386 16 MHz	MDC FTNG 2-16C
LANDMARK SPEED TEST-	19.9 MHz	20.2 MHz
NORTON SI INDEX-	17.7 MHz	18.7 MHz

PANASONIC PRINTER SPECIAL OF THE MONTH



1080i $165
1091i. 215
1092i. 315
2 YEAR WARRANTY

PANASONIC LASER PRINTER
$1695
11 Pages Per Minute

286 SPECIAL. . . $1095

20 MB Hard Disk	1.2 Floppy Disk
Mono Monitor	Monographic Card
512K RAM	Keyboard
MS DOS 3.3	One Year Warranty

CALL ABOUT OUR COMPLETE LINE OF COMPUTERS—386, AT,™ XT™
PRINTERS. ADD ON BOARDS and PERIPHERALS
We Are a Panasonic, Goldstar, Fountain, Priam Authorized Dealer & Distributors
For more information, call or write to Your Bay Area Dealer

MICRO DISTRIBUTION CENTER

MICRO DISTRIBUTION CENTER

525 Del Rey Avenue, Unit H, Sunnyvale, CA 94088 (408) 730-6965
15524 Broadway, Center Street, Gardena, CA 90248 (213) 515-0155

AT, XT is a registered trademark of IBM Inc.

1) *GrandView's* date arithmetic is rudimentary. You can set an item to be associated with a certain date. *GrandView* can also recognize eight abbreviations: "t" for today, and one or two letter codes for Sunday through Saturday. It can sort by date. And that's all, folks. No date arithmetic, no recognition of date words.

2) *GrandView* categories can only go three deep. There is an upper layer called "categories" and a middle layer called "assignments." Below that is your item. If you think how many layers deep an outline can be, you will see the inadequacy.

3) *GrandView* does not have any features for combining categories with logical criteria. If you want to find "Members" who are not in "People Responsible," you will have to do it by hand.

4) In *GrandView*, it is awkward to assign items to categories, whether you do it by hand or have the ACR (*GrandView* calls it "Auto-Assign") do it for you. For each item you must tap "Tab" to access choices on the menu, then type letters until a partial match is achieved. If you want to program the ACR, you must fill in two lines of a rule by hand, then use the space bar to call up a menu of categories you must step through to find the one you want. This clumsy mechanism is in contrast to the generally graceful interface in the outliner.

5) If you want to design a handcrafted view of your information, you had better do it in the outliner. The "Category View" window allows you to see only one assignment at a time. You cannot, for instance, see everything that has been assigned a priority at one time. Only "Urgent" or "High" or "Medium' (or whatever) can be shown at one time. The category view is not a graceful display, and contrasts again with the flexible display in the outliner.

6) The application is very sound, though the PIM is not. For all of its problems as a Personal Information Manager, *GrandView* is a dandy outliner. I already use it as the primary writing tool, and keep my contact-lists in it. It is the best outliner I have seen.

The Best Is Yet To Come

The competition in the PIM market is hot already, and should peak when Lotus precipitates *Agenda* from vapor. Look for updates from all the early players (*GrandView* and Valor Software's *INFO XL*) after they get a look at *Agenda*. I expect that they will all look at each other's best features and then begin (most genteelly) to swipe them. The exchange will profit users.

Because *GrandView* is so good as an outliner I suspect it will someday be one of the finest PIM's. Therefore, I called Symantec to ask about the upgrade policy. They do not have prices yet for future upgrades of *GrandView*. Major revisions of their $200 *ThinkTank* outliner usually have cost around $40 to $50. (*GrandView*, $295; for ThinkTank PC users,$89. Symantec, Living Videotext Division, 117 Easy Street, Mountain View CA 94043, 415/964-6300 or 408/253-9600.)

Copyright ©1988 by Birrell Walsh. All rights reserved.

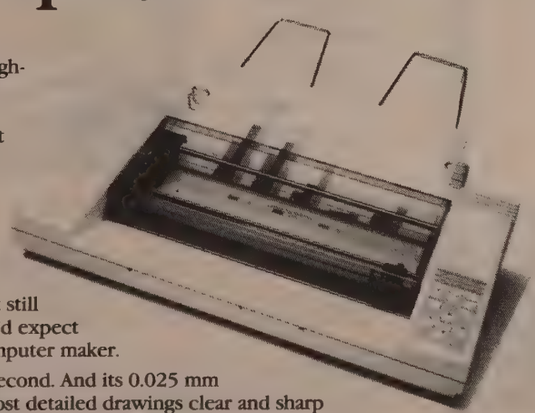
A Personal Information Manager is an Expert System for daily life. More specifically, it is an application with an automatic cross-referencer on top.

FUJITSU

FUJITSU

COMPONENT OF AMERICA, INC.

ImageGraph



Here's the one high-speed, high-resolution color plotter that looks as good as it draws. It's the new compact, lightweight ImageGraph from Fujitsu. At only 420 x 260 mm, it takes up barely half the desk space of its biggest competitor. And it's nearly one-third lighter.

But with all its fat trimmed, it still has the rugged reliability you'd expect from Japan's number one computer maker.

It's fast, too; up to 250 mm/second. And its 0.025 mm resolution makes even the most detailed drawings clear and sharp - on any size paper from postcard size to A3. Transparencies, too.

Best of all, Fujitsu's ImageGraph is compatible with the world's most popular graphics language.

SPECIFICATIONS

	FPG-315-101
Paper size	From A3 to post-card size
Applicable paper	Normal paper (thickness 50 ~ 200 μm), overhead transparent film, etc.
Plotting area	276 x 399 mm max.
Plotting speed	250 mm/sec in the X- or Y-axis direction
Pen up/down	10 cycles/sec
Resolution	0.025 mm
Accuracy	
Length	(Plotted length x 0.5%) + 0.3 mm max.
Repeat	0.1 mm max. without changing pens 0.2 mm max. with changing pens
Perpendicular	0.5 mm/200 mm max.
Color of pens	6 colors (black, red, blue, geen, violet and orange)
Type of pens	Water-based ink ball point pen and oil-based ink plastic tip pen
Dimensions	420 x 260 x 95 mm
Weight	4.5 kg (approx.)
Interface	Centronics interface (7 or 8 bit parallel) and RS-232C interface (serial)

Cypress Distributing Company

560 Lincoln Avenue, San Jose, CA 95126, (408) 297-9800
22186 Rim Pointe, El Torro, CA 92630, (714) 770-7244
2670 Truxel Road, Sacramento, CA 95833, (916) 646-1955

(Outside CA) 1-800-344-3044

Zenith Flat Tension Mask Monitor

Manufactured by: *Zenith*
For: *PC compatibles*
Reviewed by: *Bennett Falk*

The Zenith Flat Tension Mask monitor is a 14-inch analog monitor with a perfectly flat screen. It's designed to be used with the Zenith Z-449 display adapter and a PC bus card that is largely VGA compatible. Packaged with the Zenith card is a diskette containing video drivers for Microsoft *Windows*, *GEM*, Lotus *1-2-3*, Lotus *Symphony* and *AutoCAD*.

Together the monitor and card produce an exceptionally high quality display. The flat screen almost entirely eliminates glare, and this results in more vivid color representation and displays that are easier to read.

The monitor is capable of 640 x 480 resolution, and Zenith exploits this resolution to produce easy to read, very crisp text displays using a character matrix of 8 x 19. (The VGA standard, for example, is a character cell of 8 x 16.)

All but one of the VGA modes are supported, but the omission is an important one: the Zenith card does not support the 256-color mode that is part of the VGA standard. The card supports displays with 16 colors selected from a palette of 64.

Except for this missing mode, the Zenith equipment is fully VGA compatible. The VGA-oriented *Deluxe Paint II* package was used to test the card's handling of VGA modes.

The Zenith card performed very well, although at the outset *Deluxe Paint II* had some problems recognizing it as a VGA device. When *DP II* is run, the user is given a menu of display modes. With the Zenith card in place, selecting any of the VGA modes produces a message that no VGA card is present, and the software prompts for confirmation to continue. Those who persevere will find that, with the exception of the 256 color mode, the Zenith card behaves perfectly well in all the VGA modes *DP II* supports. Undoubtedly, *Deluxe Paint II* is not alone in failing to sense the Zenith card's VGA capabilities.

The Zenith card also works well with the XENIX operating system. Current versions of XENIX do not support VGA displays. When XENIX is booted, it runs a series of tests to determine what hardware is available, and some VGA cards so confuse XENIX that it can't complete the boot procedure. To its credit, the Zenith card causes no such problems for booting XENIX. Unfortunately, there is no software to exploit the card's fine features under XENIX. The products such as *VP/ix* that run DOS as a process under XENIX may offer some hope of resolving this. However, *VP/ix* does not as yet offer VGA support, and in tests a beta-test version of *VP/ix* initialized the Zenith adapter to an unworkable mode at startup.

After using the Zenith monitor and card for a few days, I was so impressed by the quality of the display that I cancelled an order for a Sony Multiscan and requested the Zenith instead.

Another potential drawback to the Zenith equipment is that the monitor is not a "multi-mode" monitor: it is analog only. The Zenith card has connections for both analog and digital monitors, but the Zenith monitor can only be connected to the analog socket.

Like any prudent buyer, I worry a lot about the compatibility and versatility of the equipment I buy. But after using the Zenith monitor and card for a few days, I was so impressed by the quality of the display that I cancelled an order I had placed for a Sony Multiscan monitor and requested the Zenith equipment instead. (Zenith Data Systems, 1000 Milwaukee Ave., Glenview, IL 60025. 1-800-842-9000.)

SATURDAY, JULY 30

COMPUTER BARGAIN SHOW

BAY AREA Computer Swap

EVERY ITEM ON DISPLAY IS AVAILABLE FOR IMMEDIATE PURCHASE AT BARGAIN PRICES

COW PALACE
SAN FRANCISCO

DIRECTIONS: From 101 or 280 take the Cow Palace Exit. Follow the signs to the Cow Palace, located at the corner of Geneva & Santos.

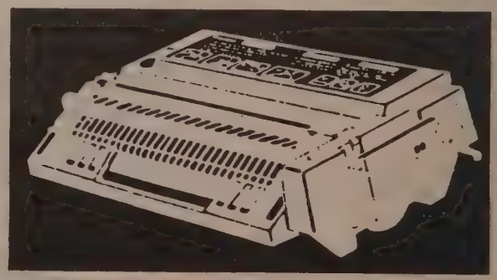
Admission $5 Children Under 12 FREE Sat. 10 a.m. - 5 p.m.
For Info. Call 415-340-9113

A MICROSHOWS PRODUCTION

Never pay full price again for toner cartridges!

We will rebuild & recharge your used cartridges better than new.

$55. Long Life Recharged Laser Printer Cartridges (w/exchange)



Our Full Service Method Includes:

■ Long life recharges giving 30-50% more life than new ■ Higher density toner for crisper reproduction ■ Up to seven recharges on your cartridge ■ Then exchange for brand new one – just $79 ■ Discounts for significant quantity

Laser Printer Recharged Cartridge	**$55 w/exch.**
Canon Personal Copier Recharged Cartridge	$49 w/exch.
Blue or Brown Recharge	$79 w/exch.
Brand New Laser Printer Cartridge	$79 w/exch.

Call LASER TONE at (415) 485-5440
for free Bay Area pick-up and delivery
(or UPS if you prefer).

SATISFACTION 100% GUARANTEED

EMPaC
INTERNATIONAL CORP.

EmPac High Point
3513-D South Main
Archdale, NC 29263
(919) 887-2775

EmPac Int'l
1180 Miraloma Way, Suite F
Sunnyvale, CA 94086
(408) 749-9935
FAX No.(408) 749-1532

EmPac S.F.
5856 Geary Blvd.
San Francicso CA 94121
(415) 751-6046
FAX No.(415) 751-4586

NOVELL Local Area Network

* **Free Estimate**
* **One Year Warranty Including Free On-site Service**
* **Authorized Novell Dealer**

Our Package Specials:

EmPac AT Fileserver with 80 Meg HD, 1.5M RAM, fully tested and burn-in.....**$2,150**

Novell Network Operating System with Arcnet Network Interface card and 1 passive hub.....**$1,200**

EmPac XT Workstation with 640K RAM, 1 floppy drive, 4.77/10MHz CPU, Arcnet Network Interface card.....**$675**

Novell Diskless Workstation including 640K RAM built- in Ethernet Network Interface card with remote Reset PROM.....**$700**

80286 Turbo System $899.00

* **Turbo dual-speed 6/10 MHz motherboard**
* **AT case with 200W power supply**
* **Zero wait state**
* **512K RAM installed**
* **One 1/2 height 1.2M floppy disk drive**
* **Hard disk/Floppy disk drive controller**
* **Monochrome graphic card w/printer port**
* **High resolution monochrome monitor**
* **AT-compatible keyboard**
* **FCC Class B approved**

80286 12 MHz System $1049.00

Peripheral Cards
XT 2 Meg EMS RAM card (0K).....$85.00
AT 2 Meg EMS RAM card (0K).....$95.00

Monitors
SamSung color monitor.....$240.00
Casper GM-1266 monitor.....$70.00
Casper Color RGB monitor (HD-55).....$240.00
Casper 1488 monitor.....$99.00

Keyboards
XT/AT Compatible (6151 or BTC5339).....$60.00
XT/AT Compatible (BTC5060).....$45.00
Keytronic 101 Function Key keyboard (*U.S.Made*).....$49.00

Modems
Internal Modem,300/1200 bps w/software.....$70.00
Internal Modem,2400 bps w/software.....$130.00

Computer Drives
ST-225 with adaptor and cables.....$259.00
ST-238 with adaptor and cables.....$279.00
Toshiba HH Drive (3.5", 720K).....$99.00
Mitsumi 5 1/4" 360K floppy Dr.....$65.00
Mitsumi 5 1/4" 1.2M floppy Dr.....$80.00
Mitsumi 3 1/2" 720K floppy Dr.....$90.00

*IBM, XT, and AT are trademarks of International Business Machine

20 MHz Super 386 $1,950.00

* 100% IBM AT Compatible
* 7 Expansion Slots
* Enhanced AT Keyboard
* 1.2 MB Floppy Drive
* Floppy/Hard-disk Controller
* 1 MB 32-bit RAM
* AT-style Case
* 200 Watt Power Supply

8088 Turbo System $550.00

* **8088 Turbo dual-speed 4.77/10 MHz motherboard**
* **AT jr.case with 150W power supply**
* **256K RAM installed**
* **Two 1/2 height 360K floppy disk drives**
* **Floppy disk controller**
* **Monochrome graphic card w/printer port**
* **High-resolution monochrome monitor**
* **AT-style keyboard**
* **FCC Class B approved** (4.77/8MHz less $20.00)

Nanao 8060s Multi-scan Monitor
Plus
Super EGA Board
Special $670.00

* **IBM Personal System II compatible**
* **IBM PGA, EGA, CGA compatible**
* **15.5 to 35 KHz horizontal; 50 to 80 Hz vertical scan**
* **Super Hi-Res (820 x 620) 14-inch multi-scan color monitor**
* **0.28 mm dot pitch CRT (8060s)**
* **Flexibly meets your various application requirements from word-processing to CAD/CAM**
* **Free monitor stand**

And

* **35.0 KHz 800 x 600**
* **Operates with 4.77, 6, 8, 10, 12, or 16 MHz CPUs**
* **EGA mode: 132 col. x 44 up to 1056 x 352 pixels**
* **Displays 3270 format (Models 2, 3, 4, and 5)**

Vendor inquires welcome **Call for quotes on items not listed**

Prices subject to change without notice

New Improved Graphics

By Matthew Leeds

There has been a remarkable number of new Amiga graphics products released in the last few months. This is not to say that is the only category where developers have been working, but a few of the new products are well worth mentioning.

New Software

Lange-Miller Computer Graphics has released the *3D Animation Toolkit*. This is exactly what it sounds like--a toolkit collection of utilities, modules, and even source code. This product is of interest to users of *Videoscape* and *Sculpt 3D*. It lets you convert *S3D* objects to *Vscape*, draw motion paths in *S3D* and convert them to *Vscape* object and camera motions, and convert text to 3D letters.

It will also let you create sophisticated pairing of camera and object motions, realistic motion that correctly obeys the laws of physics, explosions of objects, and a variety of other effects. The whole package is modular for the easy addition of new custom routines; it multitasks easily with either program, and is not copy protected (easy installation on a hard disk). The explosion module alone is worth the price, and the price is only $29.95. If you use *Sculpt 3D* and/or *Videoscape*, get this program.

One of the main reasons third party products like the *Animation Toolkit* have come along is that some users are not satisfied with the features (or lack thereof) of the major 3D programs currently available. Some users feel that the interfaces are too slow, or too awkward. *Videoscape* in particular has been faulted for its object creation interface. Programs like the *Animation Toolkit* and *Interchange* let users convert *Sculpt 3D* objects to *Videoscape* format, since many users prefer the faster rendering times that *Videoscape* offers (although the images are often not as complex).

Mimetics (makers of *SoundScape*) have released *3-Demon*, a 3-D object modeler program; it creates objects that can be used with *Videoscape*, *Sculpt 3D*, *Silver* and *Forms In Flight*. It can also be used to edit objects already in *Vscape* or *S3D* format.

3-Demon's user interface is unique. You work in a single pseudo-3D window. Virtually every option is a separate module (shades of *SoundScape*) and each module opens its own window on the screen. You can view objects in a quick wire-frame rendering, a B&W solid shaded image, or a colored solid rendering. All rendered images can be saved as IFF images should you desire.

There's more to *3-Demon* than its renderings though. It is an object editor which offers a lot of tools. It handles hierarchical object construction, spins and extrudes, scaling, rotating, moving, coloring, copying,and editing on single points, edges, surfaces or entire objects. It offers coordinate readouts, alignment grids, selective display of surface elements, and optional multi-perspective display windows.

You can edit surface characteristics like reflectivity, transparency, refractivity, and color. A mini-help function is built into the title bar. If you are dissatisfied with the object editor built into your current 3D program, take a look at *3-Demon*.

Ported From Other Environments...

Good software doesn't care what its parentage is. Occasionally software will reveal something of its ancestry in its design or function. Witness *WordPerfect*'s use of multiple keystrokes for options and strange memonics as inheritance from its MS-DOS roots. This is not always a bad thing, but programs written originally for the Amiga often have a flavor all their own.

A new animation package coming for the Amiga, called *Zoetrope*, started life on the Atari ST. The Cyber Graphics group of programs from Antic Software is a well executed set of graphics and animations programs that interact well. Jim Kent, of *Aegis Animator* fame, has been converting and enhancing this set of programs for the Amiga. *Zoetrope* will handle cel and ADO animation, color and pixel effects, masks and layered effects, and will offer 3D delta file compression for animation. Keep an eye out for it.

New Hardware And Systems

Future Touch is an integrated touch screen system for the A2000. It includes a screen applications development toolkit, the TouchSystem system interface software, and a touch screen monitor with 2056X2056 touch points resolution. It uses a resistive overlay monitor, but other technologies are available including capacitive overlay, scanning infrared, and surface acoustic wave. The system is not inexpensive, but it's good to see a vendor targeting the Amiga specifically with this technology.

*TV*Show* from the Zuma Group (distributed by Brown-Wagh) has been enhanced to include support for HAM, overscan and NTSC/PAL options. It offers a mouse and menu driven script editor for producing presentation graphics displays. Included are over 50 image transitions such as rolls, reveals, wipes, fades, flys and cuts. Color cycling is also supported. Brushes can be wiped or flown onto the screen independently at any time in any number. A standalone player program lets you distribute your finished presentations to as many locations as you desire.

If you are working in animation rendering, times are of prime importance to you. Even a few seconds of ray traced animation can take days or even weeks to render. Hardware accelerator boards for the Amiga can cut rendering times dramatically. CSA has announced the "Over 030" board, a 68030-based daughterboard for CSA's 68020 board for the Amiga. CSA is also offering the new 68882 math co-processor chip at speeds of up to 25 MHz. Combined with 32 bit wide memory, this kind of hardware accelerator can cut a week's worth of rendering into a single day's work.

The Impact A2000 SCSI/RAM controller is an A2000 expansion card that provides DMA SCSI hard disk control with room for up to one Mb of fast RAM. It also has an external SCSI connector, autoboot capability and support for the FFS. The Impact A500 HD/RAM controller is a slap-on-the-side expansion unit for the A500 that contains a SCSI/DMA 20 Mb hard disk with SCSI pass-through connector and room for up to two Mb of fast RAM. It has its own power supply, autoboot support and support for the FFS. The entire line looks well designed and solidly built. □

Resources:

Lange-Miller Computer Graphics
1571 Calle de Aida
San Jose, CA 95118

Mimetics
POB 1560
Cupertino, CA 95015

Antic Software
544 Second Street
San Francisco, CA 94107

Future Touch
192 Laurel Road
East Northport, NY 11731

Brown-Wagh Publishing
16795 Lark Avenue #210
Los Gatos, CA 95030

CSA
7564 Trade Street
San Diego, CA 92121

Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics and related fields. He currently works for Infinity Software.

NOW OPEN IN CUPERTINO

(Corner of DeAnza & Rodriques)

COMMODORE AMIGA 2000

COMMODORE AMIGA Authorized Dealer

Motorola 68000 CPU with built-in disk drive, keyboard, mouse, system software and Basic

Standard 1 MB Ram expandable to 9 MB

Multi-tasking Operating System

4096 available colors with max resolution 640x400 (more with overscan).

Only Amiga Makes It Possible.

Hardware Specials!!

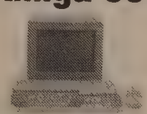
- Micron 2MB RAM Board.... **Call**
- StarBoard II for A1000 w/2MB ..**Call**
- A2000 47MB Hard Card.....**$849**
- ProGen Genlock .**Call**

COMMODORE AMIGA **PERSONAL COMPUTER**

New Software

- Interceptor
- Vampire's Empire
- Word Perfect Library
- Pro Video Plus
- 3-Demon
- Excellence!

Amiga 500 Special!



$Call

A500
with 1MB RAM and Monitor

Amiga, Amiga 1000, and Amiga 2000 are trademarks of Commodore Business Machines, Inc.

COMPUTER ATTIC

SAN FRANCISCO
217 Sansome Street
Corp: (415) 398-4543
(415) 398-4541

PALO ALTO
382 University Avenue
(415) 322-0639

CUPERTINO
10251 S. DeAnza
(408) 253-5300

Amiga Available In Palo Alto & Cupertino Only

Telecommunicating With FLASH

By David Hawkins

Logging into other computer systems is my life. It's what I do at work and what I do for fun. It's what I do when I'm bored. So telecomm programs get more use on my system than anything else. I own quite a few programs, but what I use is *FLASH*.

The Joys Of FLASH

The most important thing to me in a telecomm program is its terminal emulation. The Atari ST has a VT52 emulator as one of the standard desk accessories. But for logging into larger computer systems, a VT100 emulator is preferable. *FLASH* has the best VT100 emulator I've seen on the ST — and it's better than any VT100 emulator I've found on a Macintosh.

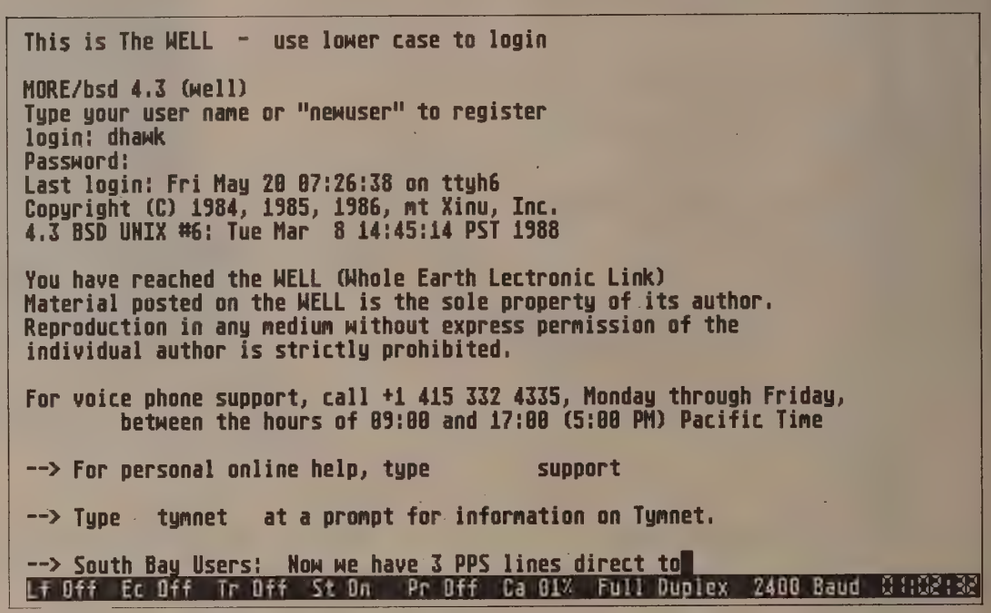
Some of the other features include macros and a programmable "script" language. The macros allow you to store commands or text to specific keys, which can help cut down on typing. The programmable "script" language makes it possible to create files that can run a series of commands without your constant attention. You can use this to login to a system, or to check for specific information, download it and log off.

The *FLASH* disk comes with a script that shows some of the capabilities of the programming language. The script will create another script for logging onto CompuServe. It asks for your user name and password, then writes a script that you can save and execute to log into CompuServe automatically.

The Word Processor

FLASH includes a GEM based word processor. While *FLASH* is running, you can get to the word processor by pressing the right mouse button. If you are capturing text from the remote system, it is held in the word processor. You can move to the word processor, edit the text, return to the normal display screen and upload the text while logged in.

The word processor includes features like word wrap, block moves and deletions, reformatting paragraphs or blocks of text, and a search and replace function. You can use the mouse to move around the screen, and scroll bars are available for moving through the text. The upload function in *FLASH* will allow you to send the text in the word processor to the remote computer by either an ASCII or XMODEM transfer.


This is The WELL - use lower case to login
MORE/bsd 4.3 (well)
Type your user name or "newuser" to register
login: dhawk
Password:
Last login: Fri May 20 07:26:38 on ttyh6
Copyright (C) 1984, 1985, 1986, mt Xinu, Inc.
4.3 BSD UNIX #6: Tue Mar 8 14:45:14 PST 1988
You have reached the WELL (Whole Earth Lectronic Link)
Material posted on the WELL is the sole property of its author.
Reproduction in any medium without express permission of the
individual author is strictly prohibited.
For voice phone support, call +1 415 332 4335, Monday through Friday,
between the hours of 09:00 and 17:00 (5:00 PM) Pacific Time
--> For personal online help, type support
--> Type tymnet at a prompt for information on Tymnet.
--> South Bay Users: Now we have 3 PPS lines direct to
Lf Off Ec Off Tr Off St On Pr Off Ca 01% Full Duplex 2400 Baud

The main screen of FLASH, showing login session. Settings shown at the bottom of the screen can be changed on a command line, or by switching to the program's other screen and using the pull-down menus.

On The Down Side

While I like *FLASH*, there are a few problem areas. The first is the manual. It was written for version 1.0 of *FLASH*; the program is now up to version 1.6. The changes from the printed manual are on the disk and should be printed up. Unfortunately I didn't have a working printer at the time and it was very difficult to check the changes in the manual and work with *FLASH* at the same time. The manual is supposed to be rewritten when *FLASH* 2.0 is released, but that's not coming up any time soon.

Writing login scripts in *FLASH* was not easy. It took a while to figure out what the error messages meant and how to correct them. Right now I've got two scripts that don't work correctly and I still have no clue as to what's wrong with them. They don't produce error messages, but they don't do the correct thing at the proper time.

Personally I'd like for Kermit, a file transfer protocal, to be built-in for *FLASH*. Even if I had the separate program from The Catalog, I'd want all my download/upload options to be grouped together when I get ready to decide between them.

Still, I think *FLASH* is the best telecomm program available for the Atari ST. It's not copy protected, so I was able to install it on the hard disk. In spite of some initial frustration, I've grown to like it more and more.

For logging into larger computer systems, a VT100 emulator is preferable. FLASH has the best VT100 emulator I've seen on the ST — and it's better than any VT100 emulator I've found on a Macintosh.

David Hawkins is the host of the Atari conference on The WELL (415/332-6106); send email to dhawk. He can also be reached as David Hawkins on the Guild (415/771-7062). He has one of the first Atari ST 1040s sold in San Francisco, both monitors, an Okimate 20 color printer, and disks all over the room.

GUITAR SHOWCASE

Do You Know What IDIM Stands For?

We do. It's our job.
We know it forwards and backwards.

Computers • Musical Software • Synths • Pianos
Keyboard Accessories • MIDI Controllers
Keyboards • Amplification

For any and all needs. We service, sell, rent.

Guitar Showcase

408-377-5864 | 408-476-4882
3090 S. Bascom Ave. San Jose | 1360 41st. Ave. Capitola

Life With An Atari Laser Printer

I've been using the Atari Laser Printer for the past month. The setup had some interesting moments, but the output has been excellent.

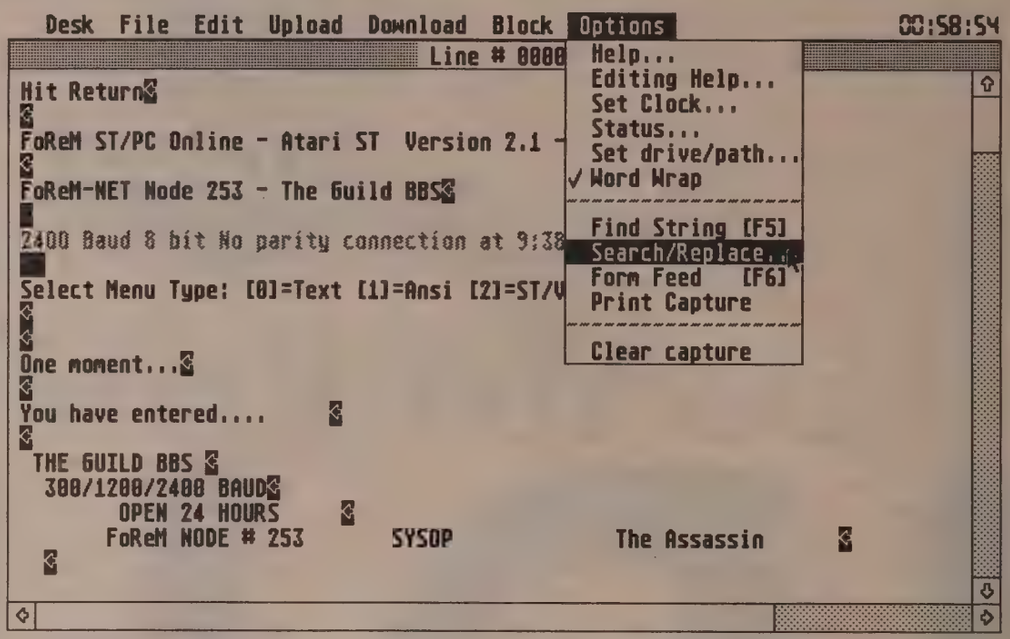
The Laser Printer comes in a huge box, so borrow a small pickup truck when you pick it up. Then you get to assemble it. This isn't too bad a job if you follow the directions. I read through the instructions twice before starting to put the pieces together. After that, it went smoothly. I had read reports that installation was difficult, but either someone didn't read the instructions or Atari has improved them since the first release.

Running the Laser Printer was a bit more difficult, but it wasn't all Atari's fault. When you add a large device to a customized setup like mine, you'll often find problems. I sure found a few.

First, I have a hard disk. The Laser Printer uses the hard disk port of the ST. So you unplug the hard disk, plug the printer controller into the hard disk port and plug the hard disk into a port in the back of the printer controller. The problem here is that the power to the printer controller comes from the Laser Printer. The instructions say to keep the printer off when you're not using it. So if you start up your system, do some printing and then turn off the printer, you lose access to your hard disk. Turning everything on and off to continually swap around cables is a real hassle.

Second, once I hooked up the printer and turned on the ST, I could do great screen dumps to the printer. But I found that no matter what printer I picked in my word processing programs, nothing would print directly. After a lot of work and hassle I figured out that DeskCart!, a cartridge in the cartridge port, was the culprit. I unplugged it and everything worked fine.

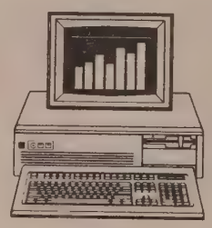
The Laser Printer works well with the Mega 2 and the Mega 4. It's much more limited with the ST 520 or 1040. I used the Laser Printer with a Mega 4 for a desktop publishing newsletter and was very happy with the results. The Laser Printer does not have its own internal memory and has to use the computer's memory in order to print a document that includes graphics or fonts. So if you have a Mega computer, the Laser Printer might be the best bet for low cost laser printing. □



FLASH also has a built-in word processor, with several pull-down menus available.

A System That Fits Your Budget

OEM & DEALER INQUIRES WELCOME



If you are looking for the best price on compatible PC's

YOU ARE LOOKING AT THEM NOW!

	DCP 8088-10	DCP 80286-10	DCP 80386-20	DCP PORTABLE 8088-10	DCP PORTABLE 80286-10	DCP PORTABLE 80386-20
BASE MONOCHROME SYSTEM WITH 20 MB DRIVE	$699	$1099	$2599	$1399	$1699	$3099
MICROPROCESSOR	8088	80286	80386	8088	80286	80386
RAM ON BOARD	256K	512K	1 MB	640K	640K	1 MB
B.I.O.S	DTK	DTK	AWARD	DTK	DTK	AWARD
CLOCK SPEED	4.77/10 MHZ	6/10 MHZ	6/20 MHZ	4.77/10 MHZ	6/10 MHZ	6/20 MHZ
GRAPHICS CARD	HERCULES COMP	HERCULES COMP.	HERCULES COMP			
MONITOR	12" AMBER	12" AMBER	12" AMBER	LCD	LCD	LCD
KEYBOARD	84 KEYS	101 KEYS	101 KEYS	84 KEYS	84 KEYS	84 KEYS
FLOPPY DRIVE	1-360KB	1-1.2MB	1-1.2MB	1-360KB	1-1.2MB	1-1.2MB
POWER SUPPLY	150 WATT	180 WATT	200 WATT	160 WATT	160 WATT	160 WATT
PORTS	P	P	S, P & G	S,P & G	S, P & G	S, P & G
DRIVE UPGRADES						
30 MB DRIVE	$35	$35	$50	$35	$35	$50
42 MB DRIVE	$200	$200	$200	$200	$200	$200
65 MB DRIVE	$235	$249	$300	$235	$249	$300
MEMORY UPGRADES						
512K MEMORY	$99					
640K MEMORY	$125	$62				
1 MB MEMORY		$225			$225	
MONITOR UPGRADES						
RGB MONITOR	*$240	*$240	*$240			
EGA MONITOR	*$460	*$460	*$460			

MULTI I/O CARD
8088 $59
80286 $49

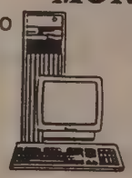
*WITH PURCHASE OF SYSTEM

THIS AD SUPERCEDES ALL PREVIOUS ADS, FLYERS, PROMOTIONAL MATERIALS AND THE LIKE. AD PRICES ARE ALWAYS SUBJECT TO CHANGE WITHOUT NOTICE. 7-1-88

PC REPAIRS & UPGRADES
IBM & COMPATIBLES
FAST TURN-AROUND
AND REASONABLE

(415) 357-6530

MONTHLY SPECIALS



DCP 80386-16 TOWER SYSTEM
1 MB MEMORY 200 WATT POWER SUPPLY S, P & G PORTS
65 MB DRIVE WITH 1-1 INTERLEAVE CONTROLLER
1-1.2 MB (5.25") FLOPPY 1-720K (3.5") FLOPPY
HERCULES COMP CARD 12" AMBER MONITOR
MICROPROCESSOR WHILE THEY LAST
101 KEY ENHANCED KEYBOARD (ONLY 3 AVAILABLE)
READY FOR YOUR NET WORKING NEEDS!!

$2599

60 MB TAPE DRIVES $575

DISCOUNT COMPUTER PRODUCTS
14895 E. 14TH STREET
SUITE 140
SAN LEANDRO, CA 94578

DEALERS & CONSULTANTS ONLY

Please Call For Complete Confidential Price List

IBM

PS II Model 25 Mono/Color. . . . $969/1195
PS II M.25 M/C + 20 MB HD .1395/1650
PS II Model 30 2 Dr. + 20 MB . .**1595**
PS II Model 30-002/021 . . . . . .1195/1645
PS II Model 50-021 . . . . . .**2395
PS II Model 60 44 MB/70 MB . *3195/3595
PS II Model 80-115 20MHz. 6295
PS II M.80 44 MB/70 MB . . .**3995/4695
AT 339 (8MHz, 512K, 30 MB).IN STOCK
AT 068 (6MHz, 256K). 2395
IBM PC/XT 2 DR. 256K 995/1395
Mono Display 8503/XT STYLE. . .189/225
Color Display 8512 439
EGA Disp. 8513/XT STYLE 495/595
Ext. Drive F/PS2 (5¼). 285
Pro Printer II/XL 349/505*
Pro Printer X24/XL24 . . . . . *519/675
Quiet-Writer II/III **895/1095*
IBM DOS 3.3 (min 5) 85

CALL FOR ALL OTHER IBM PRODUCTS
Quantity Discount Available

SEAGATE HARD DRIVES

20 MB/30 MB W/Controller $259/289
30 MB/40 MB (4038/4051) 385/450
40 MB (ST251)/40 MB (4053). . *349/449
80 MB (4096)/80 MB (277R) . . . *679/445

MINISCRIBE

40 MB (3650)/40 MB (3053). . . . $319/535
40 MB (6053) FULL HEIGHT. 495
80 MB FULL HEIGHT (6085). 679

HARD CARDS

20 MB/30 MB for XT $345/399
40 MB CARD F/XT 40 MSC 499
20 MB/30 MB for PS/2 . . . . . .399/435

MISCELLANEOUS

130 MB Maxtor 28Mlsecond. $1495
COMPAQ PORTABLE 20 MB 495
COMPAQ 40/60 MB F/DP386. . . .745/895
10/20 MB IBM HARD DISK. 145/195
130 MB COMPAQ HARD DISK 1695

DESKPRO MODELS

386/20 MHz 60 MB HD $5195
386/20 MHz 130 MB HD 6595
386/20 MHz 300 MB HD 8295
386 40 MB 16 MHz Factory 3895
386 130 MB 16 MHz Factory 5495
286 Model 1 1645
286 640K, 20 MB/40 MB HD .2095/2295
286 Model 40 (Factory) 2695
Deskpro 2 DR 256K/20 MB . .1095/1395

PORTABLES

***NEW PORTABLE 386/40 MB. . $5395
***NEW PORTABLE 386/100 MB .6699
II Model 4 (Factory/Upgrade). .2595/2395
II Model 2 2dr., 256K (80286) : 1895
III Model 20 MB 3375
III Model 40 MB 3895
Compaq Amber/Green. 195
COMPAQ Color/VGA Monitor . .525/555
COMPAG EGA/VGA ADAPTER 325/425
Compaq DOS 3.3/3.2/3.1. . . . . .89/79/59

CALL ON MEMORY AND OTHER COMPAQ PRODUCTS
Quantity Discount Available

Dealers & Consultants Only

Corporate & Retail Customers Call For Quotes

intel

8087-3 XT/80287-6 AT **$87/160
8087-2 XT/80287-8 AT 145/249
80287-10 AT 10MHz. 289
80387-16 for 80-386. 455
80387-20 Base Systems 725

OKIDATA

182/182S 120 cps, 30 nlq $229/279
192+/193+ 200 cps, 40 nlq. 329/419
ML292E/293E 200 cps, 100 nlq. . .359/489
ML393/393 Color 450 cps 945/1029
ML294/2410 . . . . . .737/1695
Lazer Line 6. 1299

IRWIN TAPE BACK UP

10 MB. Inter./External $255/379
20 MB. Inter./External *299/399
40 MB. Inter./External *379/535
Call for PS/2 Tape Back Up Units
Call for Archive, Tecmar, Sysgen

TOSHIBA

321SL/341AL (216 cps) $465/645
351-SX/351-2 COLOR 995/1019
TOSHIBA T1000/T1100. . . . . .729/1450
T1200/T3120 . . . . . .2295/2950
T3200/T5100 . . . . . .3595/4495
TOSHIBA MODEM/COMPATIBLE. 279/249

HEWLETT PACKARD

Laser Series II. . . . . $VERY LOW
*DESK JET NEW 250 CPS $679
1 MB F/HP II COMPAT/HP 369
2 MB F/HP II COMPAT/HP 669
HP Plotter 7475A 1395
HP Scanjet Scanner w/ Int. *1195

NEC

MULTISPEED EL/HD $1455/2299
MULTISYNC II/PLUS. 579/875
MULTISYNC XL 20" 1995
LC860+/LC890 . . . . . .1899/3195
P760/P2200 . . . . . .599/333

LOTUS 1-2-3 $289

LOTUS SYMPHONY 3½" $259

D-DATA

D-DATA
4742 Woodman Avenue
Sherman Oaks, CA 91423
(818) 905-0994 FAX 8189058869

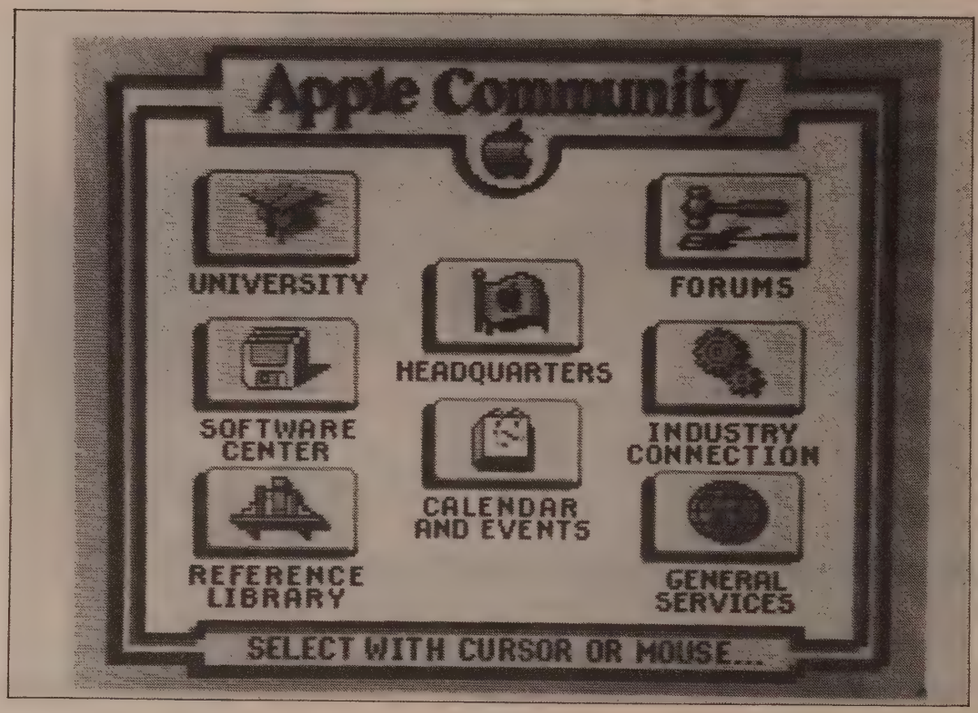
One stop shopping for dealers & consultants
UP TO 2% DISCOUNT ON PREPAYMENT.

STB MULT/F CARD (OK) . . . $49
DC 1000 TAPES 7
INTEL 8087-3 79
MODEM 1200/2400 BAUD .69/95
IBM MONO/CLR/EGA. . . .79/145/325
INTERDYNE T.B.U. 10/20 MB 75/95

There Will Be A Charge On All Credit Card Purchases. 1% Discount on Pre-payment.

A Quantum Leap For AppleLink

By Mike Markowitz



AppleLink Personal Edition offers a wide variety of affordable services and an extremely friendly interface to Apple II users.

It's only a secondhand Apple 1200 baud modem. I tried three different dealers before I found the right cable (mini-8 DIN to DB-9) to connect it to the built-in serial port on the back of th IIGS. But after all these years, it was my first halting step into the wide, intimidating world of telecommunications.

As it turned out, I couldn't have wished for a more painless introduction than AppleLink Personal Edition, which was officially announced on May 20, 1988. Through my local user group, I hooked up with the beta-test for this new service, which is a joint venture of Apple Computer and Quantum Computer Services of Vienna, Virginia. Quantum runs Q-link, a successful online service for the Commodore 64/128 community.

AppleLink is Apple's own internal online service for dealers and developers. It is not connected to Personal Edition — at least not yet. The service for The Rest Of Us is divided into two great environments and a host of services, functions, "forums," dungeons, hot tubs and salons. One environment is the Apple Community, where you can take a course, check the latest Hot Tips from Apple HQ, join a discussion or use the Reference Library. The other environment is General Services, which includes financial, recreational, social, news, shopping and customer service functions.

Mike Markowitz is a computer engineer for a large Southern California aerospace company. He has been writing about Apple II computing since the Palaeotronic Era (c.1984 A.D.). You can reach him on AppleLink Personal Edition (MOUSKOWITZ) or The Source (SIG060).

Log-on is completely automated. You put the AppleLink 5.25" disk in your boot drive, turn on the modem, turn on your computer and sit back. The software dials a local access number, sets up the connection, checks the password encoded on the disk, and welcomes you to AppleLink. The opening screens use bold graphic point-and-click icons. If you have email waiting, for example, a little flag pops up on a picture of a mailbox. When you get into the various services, the screens are highly functional MouseText pull-down menus and windows. There are standard keyboard shortcuts for mouse-haters. The software is pleasantly intuitive — it works the way you expect it to work. Even in beta test, it was delightfully bug-free.

Hardware and software setup is meticulously documented in a user manual. I still managed to make several dumb mistakes, but the Customer Service folks at the other end of an 800-number were unfailingly patient, polite and competent. The beta test crew was a remarkable cross-section of folks from all walks of life and regions of America, reinforcing the simple truth that you meet the nicest people on an Apple...

So far, nineteen top software companies have signed up to run their own boards in the "Industry Connection" forum. Many of the general-interest forums are run by respected experts. For example, the Games and Entertainment forum leader is Bob Lindstrom of A+ magazine.

In the first month, I learned to download software, upload text files, use the on-line encyclopedia, sell surplus books, software and hardware through the classified ad board, and understand the hopelessly cute abbreviations and little typographic symbols people use in online conversations — :) is a smiley face, [ ] is a hug, and // // is the Vulcan sign-off: "Live long and prosper."

About the only missing feature I could wish for is a screen-dump toggle, to direct output to the printer. Instead, you have to save files to disk and print them out offline.

A high point of AppleFest in Boston. I also collected enough rumors for half a dozen columns. Brace yourselves, dear readers...

Boring Technical Details

The Apple II version of A-Link PersEd requires a IIGS, IIc or IIe (enhanced, 128K, 80-column, Super Serial card). Most standard modems are supported. The Macintosh version will be available later this year, and will run on any Mac 512K, Plus, SE or II.

Suggested retail price through Apple dealers is $35 for the software, user guide, first year's subscription to the service and two hours of non-prime connect time. There is a glossy monthly magazine that looks a bit like the Program Guide for an incurably stylish cable channel. The first issue sports a grinning Woz on the cover.

Connect time will go for $6 an hour, 6 pm to 7 am weekdays and all day weekends; $15 an hour other times. Rates are the same for 300, 1200 or 2400 baud. For further information, see your authorized Apple dealer, don't call us.

Expect some nifty special offers and price wars

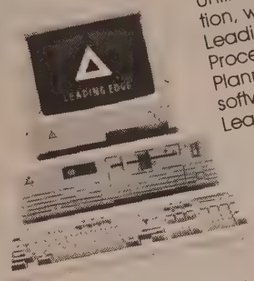
We Have It All...

Largest software selection in the world
Everything for APPLE, IBM, ATARI, AMIGA, EPSON

THE NEW
LEADING EDGE SUPER SPEED D2 COMPUTER IN STOCK NOW

LEADING EDGE®

Featuring:
- 80286 (6, 8 and 10 MHz)
- 1.2MB disk drive
- Six full-sized expansion slots
- Parallel and serial ports
- 640K RAM exp. to 1MB
- EGA, CGA, MDA, and Hercules graphics emulation with automatic mode switching
- 101-key keyboard
- MS-DOS 3.2 and GW BASIC 3.2
- 40 & 60mg fast access drives in stock now



Unlike the competition, we include Leading Edge Word Processor and VP Planner spreadsheet software with all Leading Edge systems.

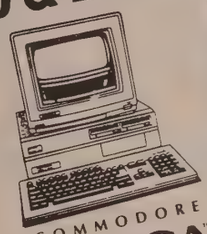
LEADING EDGE #1 NEVER UNDERSOLD

Leading Edge and Logo and Model "D" are registered trademarks of Leading Edge Products, Inc.
Authorized Leading Edge Repair Center—all parts in stock

Leading Edge Model D in stock now.

COMMODORE AMIGA 500 & 2000

- Motorola 68000, 16/32 bit CPU comes with built-in disk drive, keyboard, mouse, power cable, documentation and system software
- IBM PC compatible
- Standard 1MB RAM expandable to 9MB
- Multi-tasking operating system
- 4 voice 2 channel sound output with built-in speech
- 5 Amiga™ expansion slots, 4 IBM-PC® expansion slots, 2 special purpose expansion slots
- 4096 available colors



COMMODORE AMIGA™

Authorized Amiga Dealer

Both in stock
Lowest price available

30% off retail on all Amiga software with purchase of system through July 31st.

AST PREMIUM/286

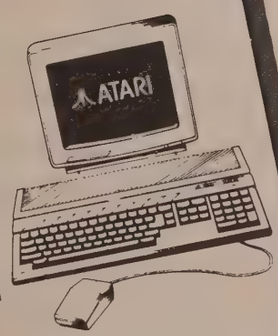
#1 RATED AT,
"EDITOR'S CHOICE P.C. MAGAZINE"
50% faster than the 8 MHz IBM PC AT.
10MHz, 0 Wait 100% Compatible

AST® RESEARCH INC.

IN STOCK NOW
Authorized Retail Dealer

All Computer sales include free training.
Authorized service & repair.

Atari Authorized Business Center



We are one of the few authorized Atari business centers in the area. Our business center status gives us the ability to offer unique software from all over the world, bring in hardware on demand, provide laser printing, give assistance with word processing, and make repairs on all Atari ST products.

Atari 1040ST monochrome system
Atari 1040ST color system
Atari Mega ST 2 monochrome system, laser printer & software $2995
Atari Mega ST 4 monochrome system, 2 MB HD, laser printer & software $3995
Atari SLM 804 laser printer $2000

ATARI Atari Authorized Business Center

WINNERS CIRCLE SYSTEMS

2618 Telegraph Ave. • Berkeley, California • 845-4814
Authorized Corporate & Institutional Dealer

as AppleLink PersEd goes into competition with the leader, CompuServe (35% market share). According to an estimate published recently in *PC Week*, only 29% of the 20.6 million computers in American homes have modems. Of 3.5 million Apples, only 1 million have modems. It's Fear of Fone Bills, that dread crippler of connectivity!!!

A Second Source

You should also know about APPLESIG on The Source. The connect charges are reasonable, the public domain and shareware libary is extensive, the menu-driven interface is friendly, there is expert assistance for technical questions, and the sysop, Joe Kohn is willing to upload my reviews and columns for the edification and amusement of the community. For more information, call The Source at (800) 336-3366 to sign up.

A Second Quarter

Apple's 1988 Second Quarter financial report went out to shareholders, analysts and press drones. Net revenues were $867 million, up 51% over last year. International sales were up 95%. The cover of the report was a somber photograph of three Mac II's sitting incongruously on antique desks in an office that looks like the French Ministry of Arrogance. There is an etching of the Arc de Triomphe on the wall. There is no sign of Woz. The quarterly report does not even hint at the existence of an Apple II product line. That's no way to treat a cash cow...Apple's hoard of cash now stands at $611 million. My stockbroker said that Apple is one of the few major corporations that could ride out a major depression, thanks to that comfortable nest egg.

AppleLink is divided into two great environments and a host of services, functions, forums, dungeons, hot tubs and salons.

Pumping Irony

At COMDEX in Atlanta, IBM was showing Apple II software (The Learning Company's Reader Rabbit, in fact) running on a PS/2 Model 25. It looked pretty good. The last, best hope for this machine in the K-12 market seems to be Trackstar, an Apple II coprocessor board with 128K of its own RAM that can live in an 8-bit slot in a PC. Apparently there is nothing in the ROM that Apple's lawyers can object to. We hope to review this card in a future issue. Most educational software for the IBM PC is strikingly ugly, thanks to the hideous colors of the CGA palette and the blocky type faces of the text. EGA and VGA promise to radically alter this picture, but they came too late, they cost a lot, and the Inertia of the Installed Base gives Apple II a death grip on the education market. Trackstar is made by Diamond Computer Systems, 1225 Tiros Way, Sunnyvale, CA 94086, (408) 736-2000.

Next month: desktop publishing on the Apple II... □

AppleLink Personal Edition Services

Features	Benefit/Description
• One step sign-on process	• Automatic online access.
• Icons and pull down menus	• Easy-to-use timesaving navigation.
• Real-time chat	• Live connection to other Apple owners across the country. Online chat tools enable user to identify and locate other subscribers online, highlight or ignore online messages.
• Electronic mail	• Send an electronic letter or disk file to any other subscriber.
• Flashnotes	• Send an instant private message to any individual online user's screen.
• Work Offline	• Compose mail offline without incurring online charges.
• Set Options	• Preset a variety of options such as a favorite online screen name or most often used online areas.
• Nationwide, 24 hrs./day	• Widely accessible.
• *AppleLink Update*™	• A monthly subscriber magazine with information on the latest service enhancements and additions. The *Update* also provides detailed listings of nightly conferences and online events.

Apple Community Services

• Forums	• Apple® II and Macintosh® product, product development, and special interest forums.
• Industry Connection	• Third party Apple hardware and software developers provide demo software, catalog product descriptions and product support.
• Software Center	• Public domain software and demoware.
• Apple Headquarters	• Information about Apple products, press releases, Apple store catalog, connection to Apple Customer Relations.
• Apple University	• Initial courses offered are how to program in BASIC and using Apple Works. Online courses contain realtime interactive classrooms, downloadable homework and quizzes.
• Reference Library	• Information from Apple's technical and product databases. Software reviews. Access to Special Education software and the Apple Programmers and Developers Association (APDA).
• Calendar of Events	• Guide to online Activities.

General Services Section

• People Connection	• General online chat area. Includes the Auditorium, featuring guests on special topics.
• Financial District	• 15-minute time delayed stock quotes from the NYSE, AMEX and OTC. Stock market summary. Investor's debate board.
• Recreation Center	• Hollywood Hotline, SportsLink, RockLink, Book Best Sellers.
• Club House	• Online groups dedicated to special interest topics such as travel, education, genealogy, astrology.
• News Room	• International news and weather as it comes across the wire.
• The Mall	• Instant shopping and travel. Includes Comp-u-store (over 200,000 brand name items), flower shop, American Airlines EAAsy Sabre service, classified ads section.
• Customer Service	• Comprehensive online guide, subscriber account information, information about upcoming online events.
• Learning Center	• University of Tomorrow, Manager's Network, Grolier's Academic American Encyclopedia.

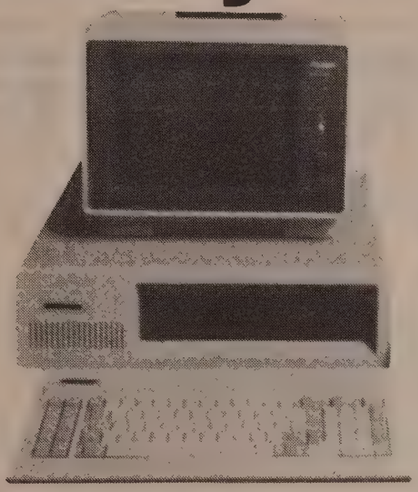
AppleLink — Personal Edition is jointly developed and co-marketed by Apple Computer, Inc. and Quantum Computer Services, Inc.

Your Best Source For Quality Products

8088 COMPATIBLE SYSTEM

- Turbo 4.77/8 MHz Motherboard
- Case & 150w power supply
- Floppy disk drive
- Monographics w/printer port
- Floppy controller
- Keyboard
- Hi-res monitor

$495



286 COMPATIBLE SYSTEM

- 6/10 motherboard
- 0 wait state
- 200w power supply
- Western digital floppy & hard controller
- 5339 enhance keyboard (101 keys)
- Monographics w/printer card
- 1.2 Drive
- Hi-res monitor

$950

386 COMPATIBLE SYSTEM

- 1 MB 32 bit RAM
- 1.2 MB floppy drive
- Floppy/hard disk controller
- 200W power supply
- 7 expansion slots
- 20 MB optional

$2195

MONTHLY SPECIALS

Seagate ST4096 80MB	Seagate ST251 40MB
Sale **$360**	Sale **$650**

FREE
Printer Cable
w/Any Printer Purchase

PRINTERS

Panasonic	
1080i	$189
1090i	209
Epson	
FX 86E/286E	$329/469
LX 800	199
LQ 800	Call
LQ 850	Call
LQ 1050	Call
Citizen	
MSP 10	$275
MSP 40	309
MSP 45	429
MSP 50	385
MSP 55	499
120D	159
180D	175
Tribute 124	450
Tribute 224	699
Star	
NX 1000	$199
Okidata	
192+/193+	$349/469
Toshiba	
321/341	$520/660
Fortis	
2010/2015	$299/395
NEC	
2200	$350
P6/P7	Call

Dealers Welcome, Call For Quantity Discounts

Printer Ribbons Available At Low Prices! Call!

ADD-ON CARDS

384 multifunction card	$78
Multi I/O card	52
Monochrome graphics w/p	48
Color graphics card	45
Memory expansion card	42
Parallel printer card	20
RS-232 serial card	24
Game I/O card	15
Floppy controller w/cable	20
Hard disk controller	60
Everex 1200 baud modem	85
Everex 2400 baud modem	170
Logimouse C-7	75
Logimouse (Hi res)	99

HARDWARE

Keyboard	$50
Enhanced keyboard	65
150W power supply	50
200W power supply	70
Printer cable	8
360K Floppy Disk Drives	
Teac	80
Fujitsu	70
Seagate ST 225	210
Seagate ST 238	230
Seagate ST 251 - 40 MB	360

Toshiba Laptops

T-1000	$739
T-1100	1539
T-1200	2450
T-3200	CALL
T-5100	CALL

SOFTWARE

DATABASE MANAGEMENT

☐ #5, #730 PC FILE+: A powerful database management program that is easy to use. Great for creating labels. Works well with PC TYPE+ to generate forms and letters $12

☐ #287, #288 FILE EXPRESS: An information management program. Small and medium sized databases are easily manipulated by using menu driven commands $12

☐ #522 INSTANT RECALL: Memory resident program that stores and retrieves a wealth of information $6

☐ #635, #636 MUSES: Specialized database, organizes manuscripts by publisher, tracking responses and correspondence as well as follow up reminders $12

COMMUNICATIONS

☐ #310 QMODEM: Fast and easy to use. Has a windowing feature. $6

☐ #499 PROCOMM: A professional communications program $6

GRAPHICS

(Programs listed require a color graphics card.)

☐ #632 HI RES RAINBOW: This program is easy to use and works with either a CGA or EGA card. Can be used with either a mouse, joystick, or the keyboard to create artwork $6

☐ #701, #702, #703, #704 DANCAD3D: A 3D Cad system that features rotation and built-in animation. An advanced CAD program for engineering applications $24

PROGRAMMING TOOLS

☐ #666 SPL: A structured programming language. A hybrid mix of structured BASIC with Pascal $6

GAMES

☐ #390 FLIGHTMARE: An excellent graphics game. Highly recommended to test your skills $6

☐ #457 GREATEST ARCADE GAMES: This includes Striker and Space Wars, and many more . A must for your game library $6

☐ #678 GOLDEN WOMBAT OF DESTINY: A text adventure from England. You too can discover the forbidden city of the Great Lost Empire and unearth the mysteries it contains (Requires a color graphics adaptor) $6

☐ #723 SUPER PINBALL #1: One of a collection of 5 great pinball games. Menu driven. Works with a CGA card and 128K of memory $6

SALES MANAGEMENT

☐ #687, #688, #689 PROSPECT: A useful sales management program that allows you to schedule appointments. Searches and retrieves names, activities, or messages with ease and speed $18

WORD PROCESSING

☐ #78, #627 PC WRITE: A powerful and popular word processing program, works well with a mouse. Spelling checker is an additional feature $12

☐ #528 New York Word: This program offers mail merge, test buffering, split screens, and a host of special features $6

☐ #455, #681, #682 PC TYPE+: This processor is from Jim Button's library. Easy to use and combines easily with PC-FILE+ for mail merge $18

☐ #480 PC Outline: Comparable to ThinkTank. Outline helps you to arrange and re-arrange items by using different categories of classification $6

SPREADSHEETS

☐ #199 PC CALC: This program is easier to use than Lotus, very powerful and effective $6

☐ #696 QUBECALC: This spreadsheet is three dimensional, with an X, Y, and Z-axis. Commands are similar to Lotus $6

UTILITIES

☐ #133 ULTRA UTILITIES: Lost files may be recovered using this program. Features include file review and modification $6

☐ #405 DESKTEAM: Memory resident utility program that has a phone dialer, printer controller, notepad, calculator, calendar, and an alarm clock $6

☐ #478 HARD DISK UTILITIES: A selection of the best utility programs that have been selected from over 25 disks in the library and compiled onto one disk for your ease of use $6

☐ #517 IMAGEPRINT: This program allows your dot matrix printer to generate documents that are in Near Letter Quality format $6

☐ #523 SIDEWRITER: Text files may be printed sideways with this useful program $6

☐ #558 PC PROMPT: Memory resident program that has HELP commands on an online mode. Provides syntax of most DOS commands. $6

☐ #608 AUTOMENU: Programs are easily accessible with this program. Batch files and DOS commands are easily executed by "point and pick" $6

☐ #728, #729 HOMEBASE: The next generation in a desktop organizer. Features a calculator. $12

☐ #610 PACKDISK: Optimize and speed up your disk access time $6

☐ #611 BLACKBEARD: The programmer's editor for writing code in PASCAL, C, or FORTRAN $6

☐ #579, #580 PASCAL TUTOR: Learn to program in PASCAL in the convenience of your own home $12

☐ #598 DISKTOOL: Like Norton's Recover erased files or fix damaged files $6

FINANCIAL MANAGERS

☐ #393 CHECKBOOK MANAGEMENT: Balancing your checkbook is made easy with this program. Features entry, deletion, bank statement reconciliations, automatic check number, etc. $6

LANGUAGES/EDUCATIONAL TOOLS

☐ #95 MATH TUTOR: Teaches grades 1-6 the basic math skills $6

☐ #612 FOREIGN LANGUAGES: A self-learning educational tool, provides instruction in Hebrew, German, Spanish, French, and Italian. Multiple choice format keeps track of errors for retesting purposes. Beginning and intermediate levels $6

☐ #705 KID GAMES: Teaches children the alphabet, word conjunction, as well as shape identification. Good graphic program for grades kindergarten through the 4th grade $6

☐ #712 JAPANESE: Tutorial that provides basic instruction in Japanese, several levels of difficulty $6

☐ **PC-SIG LIBRARY** 4th Edition $12.95

PC Sig Authorized Dealer

UNIVERSAL COMPUTER PRODUCTS

951 El Camino Real, South San Francisco, CA 94080

Mon.-Fri.: 9am-7pm Sat: 10am-5pm

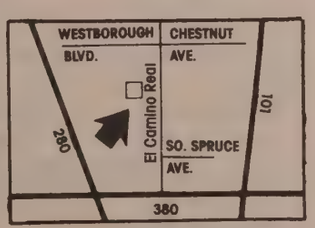
(415) 583-9736

Fax (415) 583-3457

Prices subject to change without notice

master charge

VISA



K&R II

A Short History Of C

By Bennett Falk

"Weird Mode" Dvorak [no relation] had been pounding at the keyboard for nearly two hours trying to get his program to run. He would type furiously for a few minutes, compile the program with a few keystrokes, and then hunch forward in increasingly noisy disbelief to watch it fail at run time.

When he had finally run out of changes to make, he walked over to my desk and spoke in an accusatory voice: "The compiler on this machine isn't full K and R, is it?"

"What?"

"K and R. This compiler doesn't have full K and R. I can't get my programs to run here."

It was August of 1982. I was sitting behind the desk at a time-sharing service ready to explain to anyone who would listen how to align their paper in the printer and I did not have a ghost of an idea what "Weird Mode" Dvorak was talking about. I resisted the urge to tell him it was a "C" compiler and had nothing to do with either "K" or "R."

Later I learned that "K&R" was a book: *The C Programming Language* by Brian Kernighan and Dennis Ritchie (Englewood Cliffs: Prentice-Hall, 1978). Written by C's authors, K&R was for several years the only available book about C, and it remains the definitive reference work for the language.

The C language described by the first edition of K&R was first designed at Bell Laboratories in 1972. The first C compiler ran on a DEC PDP-11 computer under the UNIX operating system of the time. Early on, C developed in two directions: the language was moved to different hardware platforms, and more complicated programming projects were undertaken including the re-writing of UNIX in C.

The first edition of K&R is a humane and scholarly work. It contains a brief tutorial in how C programs are constructed, a prosy description of the language's features with numerous short examples, and a short reference manual which describes the language so tersely it could easily pass for a design specification.

Early on, C developed in two directions: the language was moved to different hardware platforms, and more complicated programming projects were undertaken, including the re-writing of UNIX in C.

The tone of the book is professional but not humorless, and the authors pursue the task of describing the language with admirable single-mindedness. To the chagrin of beginners, the book is not about learning how to program. Though it includes many well-written examples and some commentary on programming style, it is not a manual of style or programming technique.

Those looking for a detailed discussion of how C compilers work have been similarly disappointed. Kernighan and Ritchie make the point emphatically: the language is not the compiler. While C compilers are guaranteed to respond to programs written in C, there are aspects of compiler design and implementation that are outside the scope of the language. When K&R I appeared, there were already a number of C compilers extant on various hardware platforms, and the authors were sensitive to the danger of writing programs to take advantage of any particular compiler's eccentricities.

Ten years after its first publication, a second edition of K&R has been released. It appears on the eve of final approval of a standard for C by the American National Standards Institute, ANSI. K&R II retains the structure and much of the text of the first edition, but it has been revised to bring the description of C into conformity with the proposed ANSI C standard. (Work on ANSI C has been underway since 1983 and will probably come to fruition this year.)

In the intervening decade, C has won widespread acceptance as a general purpose programming language, and there are now dozens of books about C and how best to use it. So many different compilers exist now that references to specific machines are largely irrelevant. The quaint chart of word sizes on machines the present day audience knows little or nothing about is gone. In addition, most of the comparisons with other programming languages, C with PL/1 for example, have been removed.

In the first edition there was very little discussion of the features of the standard library. The library was deemed to contain important but possibly machine dependent routines to support the built-in features of the language. The more critical library functions, primarily those dealing with input and output formatting, were discussed at some length, but no attempt was made at describing the use of standard libraries or listing the functions to be found in them. With the Second Edition, most of the standard library functions, their uses and related header files are described briefly in a separate appendix.

The text itself retains much of the first edition's character. Indeed, in rare cases the language of

Copyright © 1988 by Bennett Falk. *Bennett Falk lives in the Bay Area and works for Sybase, Inc. He writes whenever he can and hopes for the best.*

Step Up to Excellence from Your #1 Everex Dealer!*

EVEREX
COMPUTER SYSTEMS DIVISION

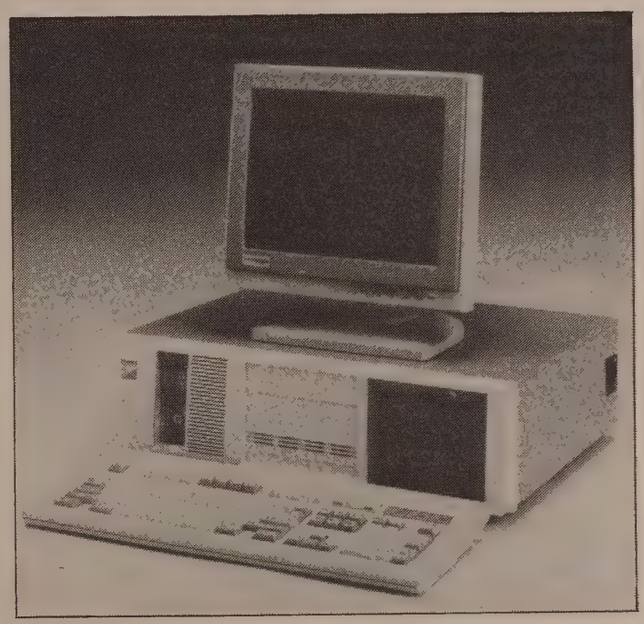
Step 386/20

Establishing A New PC Performance Standard!

The Everex Step 386/20 offers unexceeded performance in an 80386 based personal computer. Designed as a business or personal workstation, the Everex Step 386 delivers a high-performance environment for current-generation AT-compatible software while providing a platform for future operating systems, including OS/2, XENIX 386 and UNIX 386. Advanced features include Everex's Advanced Memory Management Architecture (AMMA) and a very fast 1:1 interleave hard disk controller. An eight digit real-time display continuously updates system and drive status.

Advanced Features:

- Can be factory configured with up to 8 megabytes (1 MB is standard) of dynamic RAM and a write-back cache of very high speed 25ns static RAM.
- Offers 8 expansion slots. Six 16-bit slots and two 8-bit slots.
- One of the 8-bit slots has also been designed to double as a 32-bit memory expansion slot.
- 20 MHz Intel 80386 microprocessor.
- Zero wait-state operation.
- Advanced Memory Management Architecture™ with large "write-back" RAM cache.
- High performance 1:1 interleave hard disk controller.
- Real-time alpha-numeric status display.
- Front access to 5 mass storage devices.
- One-year on-site maintenance contract included.



Check Out These Benchmark Comparisons:

SYSTEM	MIPS	LAND MARK	NORTON 3.1	NORTON (ADV)
EVEREX 386-20/0	**2.90**	**35.00**	**23.00**	**24.30**
COMPAQ 386/20	2.89	34.50	18.70	24.20
WYSE 386-16	2.11	20.60	15.30	17.60
ACER 386-16	2.08	20.60	10.30	16.20
COMPAQ 386-16	2.03	20.00	15.30	17.60
IBM MODEL 80	2.01	20.00	15.30	17.60
COMPAQ 286-12	1.41	11.70	10.30	11.50
AST PREMIUM 286-10	1.40	13.00	11.50	11.10
IBM MODEL 50/60-10	1.20	9.80	8.40	9.80
IBM AT 286-8	1.02	8.00	N/A	7.70

Available Only From Authorized EVEREX COMPUTER SYSTEMS DIVISION Computer Systems Division Dealers.

"An incredible powerhouse, it blew away everything, including COMPAQ's new 20MHz, on all the tests. It's well-built and we just can't say enough good things about it. If raw power is what you want, this is the first machine to consider . . . performance was unbelievable . . . this is one heck of a computer and the one (we) most wanted to keep."
Computer Currents, March 8, 1988

"The absolute fastest I've seen is the Everex 386 - the one to watch . . . It's slick and state-of-the-art . . . The machine clocks out faster than any 20-MHz 386 I've seen thus far . . . Hot stuff."
John C. Dvorak, *PC Magazine*, April 12, 1988

Micro Strategies is Your #1 Source for:

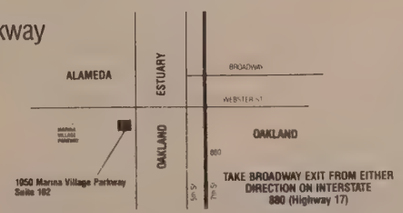
- Full Line of Everex Peripheral Products including Step 386/20, Step 386/16, Step 286/16 and Step 286/12
- Local Area Networks
- Business Leasing
- Superior After-Sale Support and Service
- Specialized Consulting & Training

Made in the USA

Everex Computer System Computers are designed and manufactured in the US to provide superior performance and reliability. All Everex systems are completely burned-in and factory-tested before shipment.

MICRO STRATEGIES, INC.
23 Years in the Industry

1050 Marina Village Parkway
Suite 102
Alameda, CA 94501
(415) 865-6880



*Everex's First Authorized Computer Systems Reseller

SEYBOLD

This is the place to be if you're serious about publishing.

Desktop Publishing Conference

September 14-17, 1988
Santa Clara Convention Center

The third annual Seybold Desktop Publishing Conference is coming to the Santa Clara Convention Center, September 14-17, 1988.

As the only major computer conference exclusively devoted to the publishing application, Seybold has the industry's most important seminar program and the world's premier exposition of computer-based publishing solutions.

It's the Conference that really makes a difference, and the place to be if you're serious about publishing.

As a Seybold attendee, you will take part in a unique event that brings together the best elements of the computer and publishing industries. As the leading forum for publishing technology, Seybold is the place to discuss, debate and discover solutions for your electronic publishing challenges.

In the seminar sessions, you'll learn from industry leaders and applications experts as they focus on the key issues. On the exposition floor, you'll see the largest display of desktop and electronic publishing companies, applications and solutions, including many new products.

Seybold is the "Event of the Year" that annually defines the market. No other show or conference even comes close. Call or write today for the Seybold Conference brochure.

Seybold Conference Information:
(213) 457-5850
9AM - 5PM PDT

SEYBOLD
SEMINARS
6922 Wildlife Road
Malibu, CA USA 90265
FAX: (213) 457-4704

NEW!

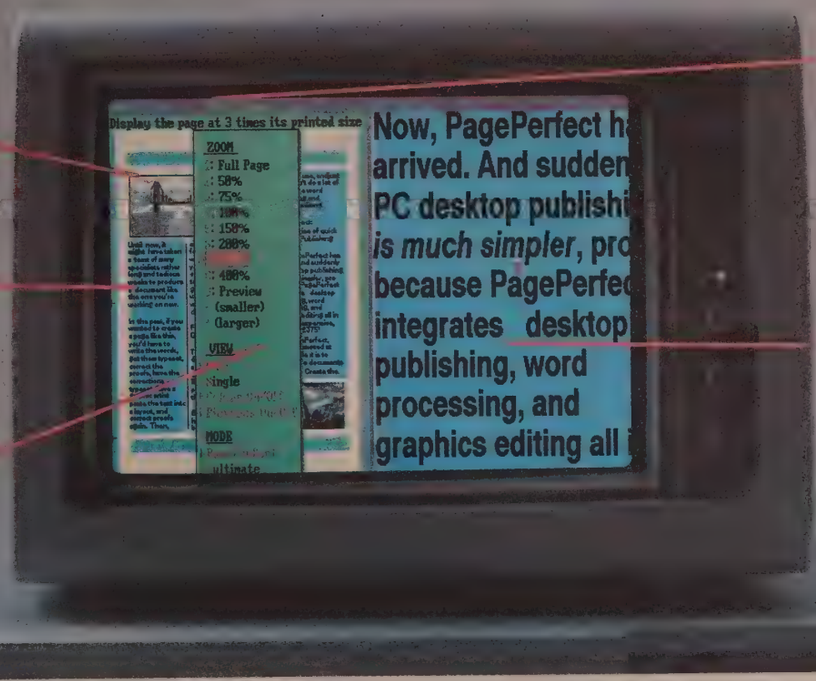
PagePerfect™

Word Processing, Desktop Publishing and graphics in one program.

Stores all your images. Scan in directly or create them with our Desktop Publisher's Graphics. All built in!. Move, resize, scale, a snap!

Comes with stylesheets that can be edited easily and quickly from within your page. Ideal for a variety of documents. Or, create your own. All the design features most people will ever need, both entry level and sophisticated. Desktop Publishing without the pain!

Color makes it special.
Both EGA and VGA standards are supported. PagePerfect uses color menus on the screen for ease of use. We offer seven shades of grey for text background.



Friendly menu prompts and reminders, as well as F1 key on-line help at all levels of the program. A tutorial is included in your documentation for easy learning as well as a quick reference guide.

Powerful and easy to use. No need to leave your DTP software to type your documents. On line spelling corrector and thesaurus included. Also accepts most popular wp files. Bitstream fonts and Fontware built in. You can change font style, point size, character attributes, and see the results on the screen as you make changes. No more guesswork!

PagePerfect by IMSI. The most advanced Desktop Publishing software on the market today provides a full range of benefits in an easy to use package at an affordable price $495

- Create better looking documents, faster.
- Ideal for your impressive memos, reports, proposals, newsletters and more.
- Integration saves you time, minimizes any need for costly third party software.
- Everyday writers can now be both creative and productive by combining text and graphics layout.
- Flexibility to change your mind and your design without having to take a class to learn how to run the program.
- See all your text, editing, images and layout on the screen as you do it.

PagePerfect Hardware Support and Requirements:

Computers: IBM PC-AT and 100% compatibles with 640K, Compaq 286, IBM PS/2 models 60, 80, IBM EGA or VGA display, hard disk (20MB minimum recommended), one high density floppy drive, DOS 3.0 or higher.

Printers: Hewlett-Packard Laser Jet Plus and Series II. Tall Trees JLaser, Epson, NEC and Toshiba 24-pin dot matrix and compatibles-coming soon 6/1/88- Apple Laserwriter Plus, Apple Laserwriter, QMS Postscript laser printer.

Available NOW At These Authorized Dealers:

Fry's Electronics
541 Lakeside Dr.
Sunnyvale, CA 94086
(408) 733-1770

Computer Warehouse
6006 FairOaks Blvd.
Carmichael, CA 95608
(916) 971-4930

C&G Computers
4174 Mission St.
San Francisco, CA 94112
(415) 587-1611

Discount Micro World
68 Paul Dr.
San Rafael, CA 94903
(415) 492-8890

Whole Earth Access
2990 7th St.
Berkeley, CA 94710
(415) 845-3000

IMSI™

It is ironic that the quest for a UNIX standard is the subject of so much rancorous debate while the C standard has been achieved in an orderly and peaceable way.

K&R II seems to parody that of the first edition. In discussing how the sizes of C's numeric data types "short," "integer" and "long" vary from machine to machine, the first edition said simply: "...each compiler is free to interpret short and long as appropriate for its own hardware. About all you should count on is that short is no longer than long."

In K&R II this has become: "Each compiler is free to choose appropriate sizes for its own hardware, subject only to the restriction that shorts and ints are at least 16 bits, longs are at least 32 bits, and short is no longer than int which is no longer than long."

New students of C will find the examples in K&R II immensely helpful. These are by and large the example programs of the first edition rewritten to conform to the ANSI standard. The new edition gives the authors an opportunity to catch up with the changes in style of the past ten years. (Indeed, by the time K&R I began to achieve a large audience at the beginning of this decade, it was already stylistically outdated.) In any event, the re-written examples offer an excellent snapshot of present day C usage.

For those who are already familiar with C, K&R II will be an invaluable resource for discovering how the ANSI C standard is related to the C language of the first edition of K&R. A separate appendix simply lists the differences, and the reference manual is now written for two voices. One reproduces faithfully in nice large type the current state of the ANSI specifications for C; the other, in a much smaller type face, presents the authors' (largely favorable) editorial commentary on the new Standard.

Since 1972 the fates of C and UNIX have been largely intermingled. UNIX would not be as popular as it is today if C had not attracted the attention of software developers. C would not be so attractive if it lacked either of the things UNIX provides: a stable multi-user environment for software development and utilities to make the programmer's job easier.

It is ironic that the quest for a UNIX standard is the subject of so much rancorous debate while the C standard has been achieved in an orderly and peaceable way.

Of course there are many possible causes for this state of affairs. It may be that languages are simply easier to standardize than operating systems. It may be that there is less money at stake in the creation of a C standard (it is certainly true that fewer hardware manufacturers are involved). It may even be that the language was designed well enough that its inventors can hand off the responsibility for maintaining the standard with little fear.

Certainly the development of a C standard has been conditioned by its inventors' attitude toward the further development of the language. This attitude was spelled out in a 1978 article in the Bell Systems Technical Journal co-authored by Ritchie, Kernighan, S.C. Johnson, and M.E. Lesk:

"What is not likely is a fundamental change in the level of the language. Realistically, the very acceptance of C has compelled changes to be made only most cautiously and compatibly. Should the pressure for improvements become too strong for the language to accommodate, C would probably have to be left as is, and a new language developed. We leave it to the reader to speculate on whether it should be called D or P." □

SATURDAY, AUGUST 6, 1988

COMPUTER BARGAIN SHOW

BAY AREA Computer Swap

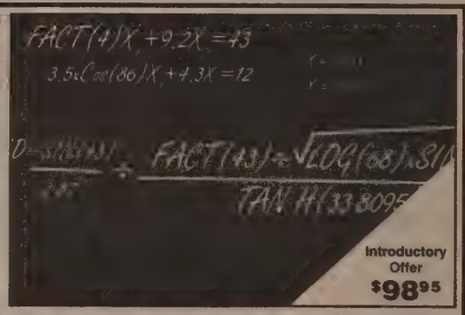
EVERY ITEM ON DISPLAY IS AVAILABLE FOR IMMEDIATE PURCHASE AT BARGAIN PRICES

OAKLAND CONVENTION CENTER
OAKLAND, CA

DIRECTIONS: From Highways 80, 580 and 24 take Highway 980 and exit 11th St. directly to the Convention Center. From Highway 880 (Nimitz) both North and South, take the Broadway exit and follow Broadway North to 11th St. Turn Left on 11th St. to Clay. Entrance to the parking garage is at 11th and Clay. Follow signs in the garage to the Convention Center.

Admission $5 Children Under 12 FREE Sat. 10 a.m. - 5 p.m.
For Info. Call 415-340-9113
A MICROSHOWS PRODUCTION

MATHMATE™
MATH PROCESSING SOFTWARE



MATHMATE™ is the Scientific Equation Solver AND Math Visualization Engine for the IBM PC and compatibles.

MATHMATE™ IS EIGHT TOOLS IN ONE!

MATHMATE™ is a powerful and integrated Solver, Calculator, and Math Graphics Engine for everyday use by Engineers, Scientists, Researchers, Financial Analysts and Students.

Most importantly, MATHMATE™ requires no additional programming and features an intuitive user interface which is easy to understand and learn.

With extensive Context Sensitive On-Line Help, rapid one-pass entry and computation, automatic input error checking, and a 100 page user manual, MATHMATE™ is as user sensitive as it is powerful!

Come In or Call for FREE Demo Disk.

5.25" AT HD 59¢

5.25" DS/DD w/label 23¢
Special Buy Premium Grade
100% Guaranteed
w/tyvek sleeve add 2¢

3.5" Generic BULK Double Sided 98¢

Pre-Formatted Disks 5.25 DS/DD+8¢/disk or AT/HD & 3.5" DS+15¢/disk.

***Royale* Data Products, Inc.**
3350 Scott Blvd. Suite 1903 - Santa Clara, CA 95054
Koll Oakmead Park, Bldg. 19
Hours: M-F 8:30 AM - 5:00 PM, Sat 12 - 4 PM
(408) 727-9022 1-800-544-3472 (415) 494-2758 (FAX)
All Offers While Supplies Last & Prices Good thru August 31, 1988

VISA
American Express, and cash also accepted.

GOLDEN GATE COMPUTERS

Low Prices • Good Quality • Good Service

SYSTEMS

- Turbo XT Barebone Kit (4/10 MHz) $139
- Complete Turbo XT System (4/10 MHz) .. $445
- Turbo AT Barebone Kit (6/10 MHz) $335
- Complete Turbo AT System (6/10 MHz) .. $795
- Complete Turbo AT System (6/13 MHz) .. $840
- Complete Turbo AT System (6/16 MHz) .. $895

PUBLIC DOMAIN SOFTWARE $2/Disk

MOTHERBOARDS

- 386 8/16 MHz (Running at 21 MHz) $1189
- AT 6/12 0 Wait (Running at 16 MHz) 289
- AT 6/10 0 Wait 239
- XT 4/10 MHz 68

VIDEO CARDS

- Monographic Printer Card $41
- Color Graphic Card 40
- Color Graphic Printer Card 41
- Everex EGA Micro Enhancer 114
- Everex EGA Micro Enhancer Deluxe 124
- Everex VGA Card 275
- Genoa Super VGA Card 275
- Genoa Super EGA Card 169

PRINTERS

- Epson LX800 ..... $195
- Epson LQ500 335
- Epson LQ800 320
- Epson LQ850 525
- Epson LQ1050 690
- Star NX1000 172
- Citizen 120D 145
- Panasonic 1091i 195
- HP Laserjet II 1645

POWER SUPPLY

- 150 Watt for XT $38
- 230 Watt for AT 58

FLOPPY DRIVES

- 360kb/1.2 MB $61/78
- Toshiba 3.5" 720K/1.44MB 83/105

FLOPPY/HARD DISK CONTROLLERS

- Floppy Controller for XT $17
- High Density Floppy Controller XT/AT 37
- Hard Disk Controller for XT/RLL 59/65
- Hard & Floppy Controller for AT/RLL ... 110/145

SEAGATE HARD DISKS

- ST-225 ..... $197
- ST-225 Kit 248
- ST-238 207
- ST-238 Kit 269
- ST-251 (40 MB, 40 ms) 330
- ST-251-1 (40 MB, 28 ms) 415
- ST-277R (60 MB, 40 ms) 415
- ST-4096 (80 MB, 28 ms) 620

MONITORS

- Samsung Amber w/Tilt & Swivel $65
- Samsung Color RGB 210
- Samsung EGA 325
- Nanao 8060S 519
- NEC Multisync II 560

MODEMS

- 1200 Baud Internal $60
- 1200 Baud External $65
- 2400 Baud Internal $105
- 2400 Baud External $145
- Everex 1200 (Int) 68
- Everex 2400 (Int) 130

KEYBOARDS

- 5060 XT/AT $33
- 101 Key Enhanced Keyboard 44

MISC.

- FastTRAP $99
- Scanner 185
- AT Style XT Case 30
- Tower Case w/Power Supply 225

One Year Limited Warranty on all XT/AT Systems, Parts—90 days Labor

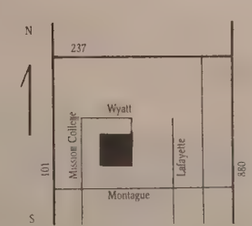
GOLDEN GATE COMPUTER

- Software & Hardware
- Printers & Peripherals
- Consulting & Technical Support
- Repairs & Maintenance

(408) 982-0167

1500 Wyatt Dr. Suite 12
Santa Clara, Ca 95054

Mon-Fri: 9-6:30



Prices subject to change w/o notice. Not responsible for typographic errors.
XT, AT are Registered Trademarks of IBM Corp.

an especially desirable feature in a programming-oriented editor.

File handling and compiler options are managed with Macintosh-style "dialog boxes" that pop up in response to menu commands. The main Compile dialog box also directs *QuickC*'s MAKE facility, which acts on the sets of source modules named in the current "Program List" (a File menu option). This machinery grinds a little more slowly than *Turbo*'s, but is notably adept at managing large projects. *QuickC* compilation provides toggles for activating a debugger, pointer and stack checks and speed optimization. The debugger allows setting of watch expressions and variables, and is compatible with CodeView, Microsoft's "real" debugger.

QuickC is nicely documented in a set of manuals remarkable for both stylistic clarity and uniquely annoying scrawny typeface. One volume of the manuals is a complete run-time library reference, also a notable feature in a compiler at this price.

In practice, this interface (and *Turbo C*'s as well) are so convenient that their operation soon becomes automatic. Except for differences in compile/link speed, in which *Turbo* has the advantage, these competing programs are remarkably similar. They both handle project/program construction automatically. They both use integrated edit-compile-run environments to speed development. And they both conform as closely as possible to the still-evolving ANSI standard for C compilers, and either would have been the best C compiler in the world, at any price, two years ago.

Face-To-Face

Considering differences rather than similarities, let's look at five areas in which a straightforward comparison of these two programs is possible.

Performance

Score one for *Turbo C*, which consistently outperforms *QuickC* in compiled code production. Borland is offering *Turbo C* as its best effort, whereas Microsoft has reserved its advanced compiler wizardry for *C* 5.0. The Microsoft plan encourages *QuickC* users to pay for a C upgrade if they feel they have a potential commercial program.

Environment Interface

QuickC's interface has a slight edge over *Turbo*'s, with a more detailed repertoire of menus and more thorough Help. It needs this edge too, since it demands an intrinsically more complicated subdirectory system than *Turbo* uses. With a few days practice, however, users will maneuver at high speed in either system.

Graphics

Although the *QuickC* manual has a better graphics introduction than *Turbo* offers, the actual graphics libraries are similar, with *Turbo*'s including a few unique routines. The compilers are tied in this division.

Language Compatibility

QuickC can handle code from any other Microsoft language, including assembler, and *Turbo C* can accommodate assembly routines and object code from *Turbo Pascal* and *Prolog*. This decision is a matter of taste, although mixed assembly/C programs will be easier to construct in a *QuickC*/Microsoft Macro Assembler combination.

Debugging

QuickC contains a facility for checking test variables and expressions in a "watch window" as a program executes. While this isn't a full-featured debugger (it commands seven pages out of 1348 in *QuickC* documentation), and it's clear that professionals are intended to step up to CodeView in the *C* 5.0 package, it's a step in the right direction. The *Turbo* manual contains tips on placing debugging statements in source code, but there's no direct support. Score a point for *QuickC*.

Conclusions

If maximum performance for $100 is your main concern, *Turbo C* is your program. Microsoft's argument against this perspective is a guarantee of *QuickC* code compatibility with *Microsoft C* 5.0, which produces code optimized in some cases beyond the power of *Turbo* 1.5, and guaranteed compatibility with Microsoft's own variations on *Windows*. By itself, *QuickC* lags behind *Turbo* on many code benchmarks, but offers modest built-in debugging and a more extensive user interface.

Borland's argument for *Turbo* is that it's a real professional compiler rather than a "get acquainted" version, and that a debugger, a run-time library on disk, and toolboxes like those (database, numerical methods) for *Turbo Pascal* will be available as add-ons. And, of course, Borland is working furiously on *Turbo* 2.0, hoping to surpass the *Microsoft C* 5.0 benchmark standards.

It's likely that the real winners in this titanic struggle are the consumers. These packages aren't for beginners, but if you're ready for some serious programming, Microsoft and Borland are ready for you. □

Copyright © by Charles Seiter. All rights reserved.

TOSHIBA FACTORY PRICES DIRECT FROM SEFCO

LAPTOPS

T-1000
Just 6.4 lbs
512K to 640K
720KB 3½" drive
Sale $710

T-1100
Dual 720K floppies
640K memory
Sale $1439

T-1200
Fully portable
1 MB memory
20 MB hard disk
Sale $2250

T-3200
80286 cpu
40MB hard disk
720K floppy
Sale $3449

T-5100
80386 cpu
40MB hard disk
1.44 floppy
Sale $4475

Modems for Toshiba
Sale $220

PRINTERS

321 SL
Draft 216 cps
LQ 72 cps
80 column
Sale $460

341 SL
Draft 216 cps
LQ 72 cps
132 column
Sale $640

351 SX
Draft 360 cps
Lq 120 cps
132 column
Sale $900

PS 351C Color Printer
24 pin
132 column
300/100 cps
P/S w/tractor feed
Sale $999

SEFCO
2682 Middlefield Road Unit C
Redwood City, CA 94063
(415) 365-7700
So CA (818) 765-8882

LASERWRITER OWNERS

Make an extra

$10⁰⁰ !!! $20⁰⁰ !!! $30⁰⁰ !!!

Give us your old Laser Toner Cartridge & we'll give you

$10⁰⁰

for each cartridge & felt wiper

New Toner Cartridge	Re-Manufactured Cartridge
Just $89⁹⁵ with exchange & your old wiper blade (without exchange $99⁹⁵)	Just $59⁹⁵ with exchange & your old wiper blade

SFL

Software for Le$$
950 Taraval at 20th
San Francisco, CA
(415) 753-1066

10 MHz 8088

10 / 4.77 MHz Turbo Motherboad
256K RAM Expandable To 640K
360K Fujitsu Drive / Controller
Monographics / Printer Card
Kybd / Sansung Monitor
DOS / GWBasic Manual
1 yr. Warranty

$429

512 K SYSTEM $509

10 MHz 286

10 / 6 MHz Motherboard
512 RAM Expandable to 1 MB
360K Fujitsu Drive / Controller
Monographics / Printer Card
101 Key Keyboard
Casper Monitor
1 yr. Warranty

$799

BABY 286 SYSTEM $765

TATUNG 386

16 MHz / 1MB RAM
1.2 MB Drive / Controller
Serial / Parallel
Keyboard / Monitor
Manual / FCC
1 yr. Warranty

$2495

LOCAL TECHNICAL SUPPORT

MONITORS

	MONO	COLOR	EGA
SAMSUNG	$68	$224	$338
CASPER	75	244	349

Casper 14" Mono $125

SPECIAL

80287-8	$239
80287-10	289
411000	$LOW
41256	LOW
4164	LOW

Seagate HARD DISK

	20MB	30MB	40MB	80MB
	$204	$232	$365	$699
Kit	249	287		

All Drives Shipped with Factory Seal

Do Yourself or Upgrade Your Old Computer:
Zero K Systems: 10 MHz 8088 ... $150 10 MHz 286 ... $369
We Buy and Sell Excess Inventory: RAM, EPROM, CPU and Math Coprocessor

DRIVE

Fujitsu 360K	$65
Fujitsu 1.2MB	88
Teac 360K	78
Teac 1.2MB	98
Toshiba 3.5" 720K	89
Toshiba 3.5" 1.4MB	119
Alloy Type Backup	469

MOTHERBOARD

8 / 4.77 MHz	$65
10 / 4.77 MHz	75
10 / 6 MHz for 286	259
Baby 286	259
12 / 10 / 6 MHz for 286	319

ADD ON BOARD

Mono / Printer Card	$40
Color / Printer Card	40
Everex EGA	128
Everex EGA 800X600	148
EGA / Printer Card	139
Mulit I/O	53
I/O card for 286	48
RS232 Card	24
RS232 for 286	26
2nd Serial Kit	14
2nd Serial Kit for 286	19
Floppy Card	
360K / 720K	24
360K / 720 / 1.2 / 1.4M	47
Hard Disk Card Cable	58
RLL with Cable	69
Hard / Floppy Card	120
WA-2	125
RAM Ext. Card	34
RAM Card 2.5M for 286	79
Printer Card	19
Game Card	18
Clock Card	24

MISC.

HP LASERJET II	$1695
Dot Matrix Printer	165
LOGIMOUSE	75
Keyboard 84 / 101	40/50
Keyboard (Click)	50/60
MaxiSwitch KYBD	60/70
Keyboard Draw	35
MODEM 1200	59
MODEM 2400	119
9-25 Pin Convertor	8
RS232 M-F Convertor	7
1-2 Data Switch Box	22
1-4 Data Swiitch Box	29
RS232 Cable 12'	14
RS232 Cable 25'	28
Printer Cable 12'	14
Printer Cable 25'	28
Printer Ext Cable 6'	10
Standard Case	27
Turbo Case	35
Case for 286	55
Disk Ext Box w/ Power	79
150W Power Supply	45
200W Power Supply	64
230W Power Supply	69
Power Strip Surge	9
Power Pad Surge	22
System Stand	19
Monitor Ext Cable	8
Keyboard Ext Cable	8
Printer Stand 80C	22
Printer Stand 132C	29
Joystick	22

SOFTWARE

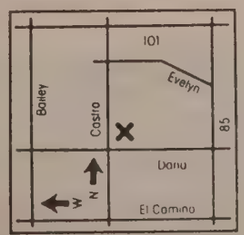
MS-DOS 3.3	$79
Learning DOS	36
Smart DOS	25
Learn to Use PC	25
Learn to use Lotus	55
Lerarn to use dBASE	55
Turbo Pascal	68
Trubo C. Compiler	68
Microsoft Windows	68
Print Shop	50
First Publisher	82
Fast Pak Mail	61
Fast Pak Data	61
News Master	74
Typing Tutor	41
Tournament Bridge	40
Sargon III	18
Flight Simulator	40
3-D Helicopter	41
Ultima IV	45
Jet	40

DATA-ONE INC.

293 CASTRO ST., MT. VIEW, CA 94041
TEL: (415) 962-1771 FAX: (415) 962-1774

Prices subject to change without notice

• Dealer Inquiries Welcome •
• UPS Shipping Daily •



USER GROUP NETWORK By Mary Eisenhart

We'd like to draw your attention to the BMUG column in this issue and welcome BMUG to *MicroTimes*.

BMUG, as some of you may know, began life as the **Berkeley Macintosh User Group,** and is now known as **BMUG Inc.** You may have noticed Apple's recommendation of this group as an information resource in your Macintosh manuals, and BMUG's **David Morgenstern** will be bringing us a collection of tips and info gleaned from the club's tech support line and its weekly group meetings. We look forward to a long and cheerful future of bringing you this information.

The June 2 BMUG meeting featured a presentation by **Bill Atkinson** of the new features of *HyperCard*, which he demonstrated for the near-capacity crowd. He was joined by most of the *HyperCard* development team, and those in attendance took advantage of the rare opportunity to ask the program's authors about the problems they'd been having. They also bombarded Atkinson with questions about future enhancements, with most of the more interesting queries getting a big grin and "I can't talk about that." After about four such inquiries, *HyperCard*'s author commented, to general applause, on the amazing ability of the group to hit upon all the things he couldn't talk about.

After the more technical presentations, **Amanda Goodenough** unveiled the latest in her **Inigo** series of stacks, in which *HyperCard*'s favorite black cat takes a bath, eats a lot of bananas, and has other adventures. A fine time was had by all.

Continuing with events in the Mac universe, **Ruth Stever** of **MacValley** in Burbank invites you all to the group's July 19 meeting, which will feature a presentation by **Cliff Johnson** of Miles Computing. Johnson is the author of a game program called *The Fool's Errand*, which he will demonstrate for the assembled throngs. The meeting will be held at 7:30 pm in Burbank High School's cafeteria, located at Burbank Blvd. and Third Street.

UNIX is attaining new prominence on the user group scene, and we've received two UNIX-related announcements this month. One comes from the Bay Area chapter of the **Association for Women in Computing**, which is sponsoring a presentation of what the operating system is, what its best uses are, why it's suddenly become so popular, and its likely impact on the future of computing. All this information will be presented by **April Ogimachi**, and the presentation will begin at 6:30 pm July 6, at the Stagecoach Restaurant, 44 Montgomery Street in San Francisco. Fee is $8.00 for members, $13 for guests. More information is available from **Louise Wolfe** at (415) 655-3110.

David Harris, meanwhile, writes in to tell us about the new and growing **PC UNIX SIG**, which meets on second Mondays at the AT&T Training Center in Sunnyvale. Meetings are intended to let beginners and experts pool their knowledge of UNIX versions including Microport, XENIX, and Minix. The group is in the process of putting together a software library of public domain source code, and its meetings offer talks by UNIX experts and general Q&A. The June 13 meeting featured a practical discussion of the different varieties of UNIX, which varieties are better for 286 and 386 machines, and what all this is likely to cost your business.

If this sounds like the resource you've been looking for, waste no time, but call **Dan Kionka** at (408)432-1300 or the ever-helpful **Mark Dill** at (408)995-3966 for further information. Denizens of Usenet can also reach Dan at {amdahl, uunet, unisoft}!cerebus!dank.

Our conferencing system of choice, **The WELL** (415/332-6106) is lively as ever these days. There's quite a lot going on in the various conferences, which number well over 100: Deadheads are discussing the summer tour season in Grateful Dead, scriptors compare notes frequently in HyperCard while Mac users discuss the joys and sorrows of System 6.0, armchair politicians blaze away in Politics, and in the Jewish conference, **Ari Davidow**, an occasional contributor to these pages, is pleased to report that correspondent **Mark Steinberg** "is in Israel for a few months as an intern for *New Outlook* magazine and has started sending in his daily (or so) reports on what is happening over there." So if your TV and newspapers aren't giving you the information and entertainment you *just know* is out there, jump into The WELL. Call **John Coate** at (415)332-4335 for more information.

The **Software Entrepreneurs' Forum**, always a hotbed of interesting activity, will be featuring the distinguished **Esther Dyson** at its July 21 meeting. Dyson, whose newsletter *Release 1.0* is indispensable to the cognoscenti, had not yet announced the topic of her talk at presstime; call SEF's **Barbara Cass** at (415)854-7219 for details and updated information.

SEF, which is based in the Bay Area but has members nationwide, is in the process of forming a national network of regional software associations, which will be of particular interest to those who live too far away to take full advantage of the group's local resources. SEF has proved invaluable resource to both developers and marketers, especially in Silicon Valley, so if you've got a product, an idea, or just think you might like some advice about the best way of matching your brainchild with its natural audience, SEF is the place to start. Barbara Cass is the person to call for details on this project; her number again: (415)854-7219.

From beautiful downtown Emeryville, **Bill Baldwin** of **Personal Computer Solutions** would like you to know about the **Network Users Group**, sponsored by his company. The Network Users Group offers the opportunity for LAN users and would-be LAN users to compare viewpoints and share information to enable managers to make more informed decisions for the growth and productivity of their network systems. The initial meeting on June 2 featured a presentation on "OS/2 On Networks"; the July 7 meeting will have a panel discussion of "groupware" and workgroup software. Speakers will include representatives of Action Technologies, who will explain The Coordinator, Brøderbund Software, publisher of ForComment, and Conectic Systems, developer of Higgins. If you'd like to learn more about this group, call Daniel Parillo or Barbara Snow at (415)655-6500.

That's it for another month. If there's something you want to tell us about, please feel free to send email to microx on The WELL, or send the US variety to User Group Network, 5951 Canning Street, Oakland, CA 94609.

BULLETIN BOARDS

INTERNATIONAL

FidoNet Argentina (054). (011) 541-22-419. 8-N-1 3 PM-11 AM PST. The 1st fido node in Argentina has over 450 subscribers. Specializes in issues from S.A. PD software library to d-load. Sysop: Pable Kleinman

Cassia Express. (065) 344-9163. 300/1200/2400 24 hrs. Singapore. Sysop: N.M.Rahman

Remote Bulletin Board (Singapore). (065) 445-1646. 9600/2400/1200 24 hrs. 218 MB Online (IBM upload/download). Sysop: Umar A. Rahman

Terrapin Station. (203) 656-0134. Grateful Dead Board. Sysop: Klaus and Gretchen Bender.

209

Bertha Board. (209) 239-9853. 300/1200/2400 8-N-1 24 hrs. MS-DOS, others. Some emphasis on programming. Up- & downloads. Free. Registration required. Sysop: Kenneth Roach

Silicon Realms. (209) 754-5530. 300/(1200 Soon) 9:30AM to 6:30AM.Formerly Motherload 64. Commodore, PET & Plus/4. Programmers board, Continuing & Short Story boards, FRPG. Sysop: Joe Commodore

213

Ashton-Tate Support. (213) 538-6196. Free technical support, answers to questions about Ashton-Tate software products.

Carrier Point Information. (213) 423-4999. 1200/2400 8-N-1 All but 1:30-3:30 PM, TBBS multi-user system. Operating 10 lines, 9 in rotation. All lines support 300/1200/2400 baud rates.

Chat Line. (213) 534-4311. Multi-line, Multi-user interactive group & private forums. Downloads, Database.

Dial-Your-Match. (213) 539-2448. Lomita.

Dial-Your-Match. (213) 633-4349. Downey.

Dial-Your-Match. (213) 461-9899. Hollywood.

Dial-Your-Match. (213) 467-6776. Hollywood.

Dial-Your-Match. (213) 558-4336. Culver City.

David's Amazing BBS. (213) 459-5891. Conferencing (like the Well, but easier to use). Electronic bar; talk; matchmaking; 5 lines; unique software. Sysop: David Dennis

ICN. (213) 204-0646. 2400/1200/300 24 hrs. The place to buy/sell/trade collectibles (stamps, books, etc.)

Information Symposium. (213) 258-5086. 300/1200/2400 8-N-1 24 hrs. Serving the Info. Professional, Tech. Info, M.I.S. Employment. MS-DOS; OS/2; graphics. Password req'd for access is "Micro." Sysop: William Bloomer

Lynzie's Motherboard. (213) 650-0519. 300/1200/2400 8-N-1 24 hrs. Multiinterest. Social events for users. If you're looking for a discriminating BBS, this is the place to be. Sysop: Lynzie Flynn

Oil Patch PC Board. (213) 427-5980. 300/1200 8-N-1 Eves. only. Exclusively C. Libraries; utilities; source code; tutorials. Sysop: Rick Shoop

Southland News. (213) 402-4079. 24 hrs. An online newsmagazine w/ general news, comments, entertainment, computer news show, club & swap meet listings.

The Great American Audio/Video Board. (213) 469-6542. 300/1200 8-N-1 Eves. Reviews, essays, buyers guide, instruction. Sysop: Keith Bass

Westside. (213) 933-4050. 3/12/2400 8-N-1 24 hrs. 17 lines w/chat, library, matching. Public & E-mail.

Beaver Creek. (213) 437-1410. 8-N-1 All but 4-9 PM. Sysop: John Campbell

SOFTWARE

Pagemaker- Dos 3.0	495
Pagemaker- Mac 3.0	369
Freehand Mac, V.1.0	289
Lotus 1-2-3	293
DB III Plus	399
Rbase Dos V.2.1	419
Microsoft Word Dos	209
Microsoft Word Mac	209
Microsoft Works Dos V1.05	139
Microsoft Works Mac	159
Power Point V.2.0	209
Microsoft Excel Mac V1.06	209
Microsoft Windows Dos	59
Microsoft Mach 20	299
Microsoft Windows 386 Dos	109
Wordperfect	229

Cash Prices Only
Corporate P.O.'s Welcome

MAIN COMPUTERS
(415) 994-0355

NEC

Multispeed EL (Mod 2)	1549
Multispeed HD (20MB)	2269
Multisync II	579
Multisync XL	1951
Multisync Plus	854
Multisync GS (A/G/W)	171
Printer P5300	669
Printer P5200	509
Printer P2200	329
Laser C-890	3199
Printer P9,XL	1029
Printer P5,XL	829

Cash Prices Only
Corporate P.O.'s Welcome

MAIN COMPUTERS
(415) 994-0355

OKIDATA

ML 182	209
ML 292	396
ML 293	518
ML 294	731
ML 320	304
ML 321	426
ML 390	426
ML 391	579
ML 393	913

Cash Prices Only
Corporate P.O.'s Welcome

MAIN COMPUTERS
(415) 994-0355

EPSON

LX-800	183
LQ-850	518
LQ-1050	732
FX-850	349
FX-1050	499
LQ-2500	796
EX-800	427
LQ-500	324

Cash Prices Only
Corporate P.O.'s Welcome

MAIN COMPUTERS
(415) 994-0355

Time-X-Change. (213) 329-3922. 300/1200 8-N-1 24 hrs. Timex-Sinclair & CP/M users Free Sysop: Dave Clifford

Electronic Media Network. (216) 241-2612. 1200 8-N-1 23 hrs. Provides link between employers and high-tech & highly skilled professionals.

Planet Zed. (213) 434-2933. 300/1200/2400 8-N-1 24 hrs. Music oriented, for all computer types. Record reviews, coming events. Nice graphics.

Grey Matter BSS & RCP/M. (213) 971-6260. 300/1200/2400 24 hrs. Televideo and Timex/Sinclair support. Sysop: Ed Grey

Lynzie's Motherboard. (213) 650-0519. 300/1200/2400/9600 8-N-1 24 hrs. Matching, group and private chat system, local social events. W. Hollywood. Sysop: Lynzie Flynn

Lynzie's Motherboard. (213) 659-1982. 300/1200/2400/9600 8-N-1 24 hrs. Matching, group and private chat system, local social events.West L.A. Sysop: Lynzie Flynn

Lynzie's Motherboard. (213) 650-6172. 300/1200/2400/9600 8-N-1 24 hrs. Matching, group and private chat system, local social events. Sysop: Lynzie Flynn

The Alternative BBS. (213) 439-7044. Programmer and user forums. UP/DL. Serious PC enthusiasts or professionals only please.

The Midnight Express. (213) 874-1022. 300/1200 24 Hrs. Unlimited E-Mail, Land of SPUR. Modifies GBBS Pro System.Games, stock exchange, quizzes and surveys. Sysop: Justin Case

Loan Master BBS. (213) 372-4050 8-N-1. Daily mortgage rates for those purchasing a home or refinancing. Type GO LOAN upon entry. Sysop: American TeleWeb.

Beta RBBS. (213) 393-9777. 1200/2400. Free entertainment BBS. Audio, video, DJ, music, movies, news and discussions. Sysop: Jason Lin.

Online Goldmine. (213) 860-5649 for 300/1200; (213) 860-3570 for 1200/2400. 7-EVEN-1 24 hrs. Classifieds, electronic yellow pages, messaging, trivia and horoscope. PRESTEL Graphics protocol available upon registration.

The Backroom BBS. (213) 920-2113. 300/1200/2400/9600 8 bit 24 hrs. Very Mac, also Apple II and MS/DOS. WWIV v4.0 software.

Supporting WOCMUG, CSPG and MACPAC. Sysop: Byte Knight.

Hughes Jobs. (213) 372-4050, 8-N-1, 24 hrs. Job opportunities at Hughes, support systems in Long Beach. Type GO HUGHES upon entry. Sysop: American TeleWeb.

Loan Master BBS. (213) 372-4050, 8-N-1. Daily mortgage rates for those purchasing a home or refinancing. Type GO LOAN upon entry. Sysop: American TeleWeb.

Rockwell NAAO Jobs. (213) 372-4050, 8-N-1. Includes online job listing and a resume drop. Type GO ROCKWELL upon entry. Sysop: American TeleWeb.

Easy Reader Electronic Edition. (213) 372-4050, 8-N-1. Free online publication. Includes movie times, editorial, 500 new classifieds each week and more. Online ordering of classifieds and letters to the editor allowed. Sysop: American TeleWeb.

312

Feminist BBS. (312) 383-2059. 300/1200 24 hrs. Lively discussion, everyone welcome. Michelle Frost.

408

Bay Area Atari. (408) 249-7722. 300/1200 24 hrs.

Bay Area BBS. (408) 723-7238. 300/1200/2400 Several "live" doors including adult & X-rated. Sysop: Jim Acker

Byte Bandits of America. (408) 374-3974. 300/1200 24 hrs. Free. MS-DOS Sysop: Sam C. Brown

BYTE Bandits of America - TRS 80's. (408) 374-5139. 2 monthly meetings in Campbell, CA

Campbell Chapter of 64/More Commodore. (408) 946-6154.

Cupertino Chapter of 64/More Commodore. (408) 946-6154.

Dial-Your-Match #296. (408) 720-0724. 300 8-N-1 24 hours Sunnyvale. Matching and e-mail.5 boards. Verification required. No fees.

Digit Mailbox. (408) 946-6154. 3-9600 24 hrs. All welcome. Amiga run. Official 64/MORE BBS.

Matchmaker San Jose. (408) 248-5755. 300/1200 24 hrs. The ultimate pen pal system. Make a date, meet a friend, have the time of your life. Type "mm" at login. 300 plus calls/day. Sysop: The Matchmaker

Non-Smokers BBS. (408) 298-4277. 300/1200/2400 8-N-1 24 hrs. Restaurant/hotel guide. Health information.

North Valley Chapter of 64/More Commodore. (408) 946-6154.

Pacific Exchange Multiline. (408) 946-8561. 1200/2400. Large IBM file selection, conferences, multi-node chat.

PC-Shareware. (408) 270-4084. 1200/2400 8-N-1 24 hrs. Registration required. Dedicated to shareware for IBM PC. Over 50 megs of most popular & latest available. Sysop: Bob Allen

Public Domain Software Special Interest Group (PDS-SIG). (408) 270-4085. 1200/2400 8-N-1 24 hrs. One of largest selections of PD & shareware PC software.Over 250 megs. of files. Registration required. 64 directories.

San Jose Chapter of 64/More Commodore. (408) 946-6154.

Silicon Valley FOG. (408) 738-1071. 300/1200/2400 8-N-1. Message system & 42 Megs of CP/M & MS-DOS files. Sysop: Bob O'Connor

ST Hotline. (408) 244-2493. 9600 24 hrs. Atari ST only. 110 Meg hard disk.

Stock Market. (408) 733-9341. 300/1200 8-N-1 24 hrs. Provides precise, reliable price forecasts for 6000 NYSE, AMEX & OTC (NMS) stocks. Multi-line, multi-user system.

S-100. (408) 262-5150. 300/1200/2400 8-N-1. CP/M & MS-DOS libraries.

The Dungeon. (408) 992-0846. 300/1200 8-N-1 24 hrs. All adult, registration required. Sysop: Sir Dep

The Guild. (408) 988-4004. 300/1200/2400 24 hrs. 160 MB online. Hardware SIG's, BBS info, Professional Certification Testing. Sysop: Nat'l BBS Soc. Staff

Timex/Sinclair BBS of Silicon Valley. (408) 735-7390. 300/1200 8-N-1 24 hrs.

Towards 2000!!. (408) 773-9759. 300/1200 8-N-1 24 hrs.. IBM oriented. No Fee. Message base. Sysop: Keith Proctor/Chris III

TRS-80. (408) 374-5139. 300/1200 24 hrs. Tandy. Free. Sysop: Sam C. Brown

Gavilan User Group. (408) 374-5140. 300/1200. Portables. Free. Sysop: Sam C. Brown

Hotel California. (408) 942-1081. 300/1200 8-N-1 24 hrs. Commodore, Punter D/L. Sysop: Big Foot

All Wood Lacquer-Finish Computer Carts

• Functional
• Affordable

In Stock. Call Now!

ALPHA
FINE COMPUTER FURNITURE
930-0277
2241 N. MAIN-WALNUT CREEK OPEN M-S 9-5:30 WED. TILL 8

Your Best Source for
Computer & Chips

Same Day Shipment

MEMORY RAM:

41256-100ns-80ns	call	4164-100ns	$3.30
41256-120ns	$12.00	4164-120ns	2.80
41256-150ns	11.00	4164-150ns	2.40
4128-150ns	call	41464-150ns	9.00
1 MEG-100ns-120	call	41464-120ns	9.50
256X9-10 SIMM / SIPP	call	1 MEG X 9-10	call

SIMM/SIPP MODULE....CALL

MEMORY EPROM

2708-450nn	$6.95
2716-450ns	5.00
2732-250ns	4.50
2764-250ns-200ns	3.50
27128-250ns or Faster	5.50
27256-250ns	6.50
27512-250ns	14.00
80386-16 32Bit	575.00
80386-20 MHz	700.00

COPROCESSOR'S

8087-5 MHz	$98.00
8087-8 MHz	150.00
8087-10 MHz	225.00
80287-6 MHz	155.00
80287-8 MHz	235.00
80287-10 MHz	280.00
80387-16 MHz	450.00
80387-20 MHz	695.00
V-20-8 MHz	call
V-20-10 MHz	call

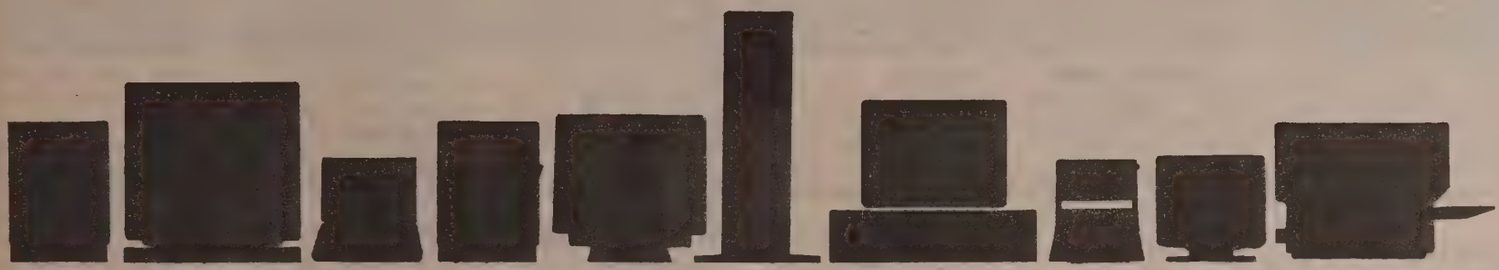
SYSTEMS (FCC Class A)

AMAX 386 BUSINESS SYSTEM
6/16 MHz, 1MB Ram, Seven Expansion Slots (5 AT, 2 XT) 7-32 BIT, 220W High Performance Power Supply, 101 Key Keyboard, 1.2 MB Floppy Dr, Hard/Floppy Controller $1975.00

AMAX 3000 AT
512k Ram, 1.2 MB Dr, Hard/Floppy Controller, 6/10 MHz, 0/1 Wait State, Enhanced Keyboard $975.00

* Display Adapter & Monitor Optional

TEL:408-735-9702 FAX:408-732-1571
ADVANCE MICRO TECHNOLOGY
VISA & MASTERCHARGE ACCEPTED
Please Note - All Prices Subject to Change



THE COMPUTER STORE

COMPLETE 386 TOWER WITH 65 MB HARD DRIVE! $3499 only

Introducing the
OPTIMA MT 16386a

STANDARD FEATURES INCLUDES:

* Mylex 386-16 motherboard with AMI BIOS
* Zero Wait 64K Static RAM Cache
* 1 MB of 32 bit RAM on board. System expandable to 16 MB
* EMS board
* 65 MB Miniscribe Hard Drive with Adaptec 2372 1:1 sustained interleave RLL controller
* Tower case with Turbo & Reset buttons
* 270 watts power supply
* 1.2 MB 5.25" Floppy Drive
* 1.44 MB 3.5" Floppy Drive
* 14" Flat Screen Hi-res Non-glare Monitor with Tilt & Swivel Base
* 101 enhanced keyboard with "Tactile/Click" Feel
* Serial/Parallel/MS Bus Mouse compatible ports
* MS Bus compatible mouse
* Hercules compatible, RGB, Composite mono, and NTSC video outputs
* MS-DOS 3.3 and GW-Basic

ALSO AVAILABLE:

OPTIMA MT 20386a $4,345.00
(20 mhz version of MT 16386a system)

OPTIMA DX 1088 $499.00
(8088 4.7/10 mhz,256K RAM,360K FDD,150 watts ps 84 key kbd,Mono graphics card & monitor,prtr port)

OPTIMA DX 10286 $949.00
(80286 6/10 mhz,512K RAM,1.2MB FDD,230 watts ps Clock/calendar,FDD/HD controller,101 key kbd, Mono graphics card & monitor,printer port)

OPTIMA DX 16386 $1,999.00
(80386 8/16 mhz,1 MB RAM,1.2 MB FDD,230 watts ps Clock/calendar,FDD/HD controller,101 key kbd, Mono graphics card & monitor,printer port)

OPTIMA Portables (See picture below)
(All systems include 20mb HD,serial, parallel, & game ports,ext 5.25" FDD port,Herc/CGA video,backlit LCD,3.5" 1.44 MB floppy drive (720K for LX 1088))

LX 16386 (w/ 1 MB RAM) $2,999.00
LX 10286 (w/ 640K RAM) $1,999.00
LX 1088 (w/ 640K RAM) $1,499.00

OPTIONS:

CGA Upgrade	add $200.00
(LX series)	add $249.00
EGA upgrade	add $400.00
(LX series)	add $490.00
20 MB upgrade	add $245.00
(DX 1088)	add $279.00
30 MB upgrade	add $355.00
40 MB upgrade	add $455.00

All systems come with a ONE YEAR Parts and Labor Warranty.

AUTHORIZED DEALER FOR
ALDUS KAYPRO LEADING EDGE
MICROSOFT MYLEX OPTIMA

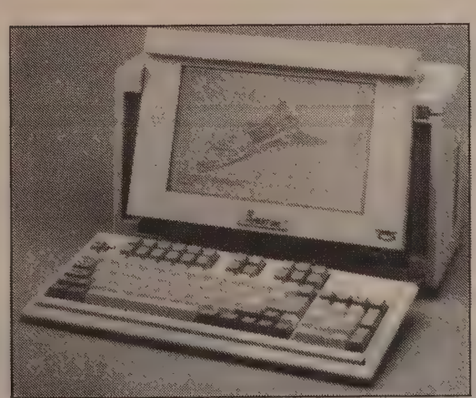
MOUNTAIN VIEW
429 Castro Street
415.968.3466
FAX 415.968.2618

SAN FRANCISCO
5000 Geary Blvd at 14th Ave
415.387.PCPC

Store Hours: M-F 10 - 7, Sat. 11 - 5
Mastercard, VISA Accepted
Corporate & Government P.O.'s Accepted
Dealer Inquiries Welcome

Trademarks appearing herein belong to their respective owners.
Prices subject to change without notice.

CHECK OUT OUR PORTABLES!



* *Bright, very readable backlit LCD screen, with EGA emulation*
* *System upgradable from 8088 to 80286 to 80386*
* *Configurable to your specific requirements*
* *For prices, please see listing above*

LDW Line. (408) 435-1929. 300/1200 8-N-1 8 PM-9 AM. Official BBS of LDW, Inc. features new prod. bulletins, LDW BASIC programer's support, ul/dl, & free spreadsheet for eval. Sysop: Bogdan Blaszczak **PDS-SIG.** (408) 270-4085. 2400 8-N-1. Largest selection anywhere of pub. domain & shareware software.

SBUG-BBS. (408) 249-8259. 1200 8-N-1 24 hrs. Membership in SBUG (or registration fee req'd.) Sysop: Jim Gonsalves

The Student's Board. (408) 629-9678. 300/1200 8-N-1 7:30 to 10:30.

PD files, Conference, SIG, All welcome, even if you're not a student. Sysop: Gary Dennis

Topaz BBS. (408) 263-0317. 300/1200/2400 8-N-1 24 hrs. Literature, poetry and personals. Free. Suggestions welcomed. Sysop: Brenda Tyler

Shrink Tank BBS. (408) 257-0323. 300/1200 24 Hrs. Psychological theme. All users welcome. Mental health and other professional are encouraged to call. Free. Sysop: Dr. Skip Bischoff

Teleplay. (408) 262-4488. 300 A computer gaming club. Multi-user, interactive, fantasy roleplaying. Also: (408) 293-4970. Voice: (408) 262-4942

Hot City. (408) 758-8334. Commodore with CBM color/graphics. Salinas.

Amiga Exchange. (408) 375-1823. Amiga, Commodore. Runs Opus.

AMME jr. (408) 899-1219. Commodore. CBM color/graphics.

Apple SMUG. (408) 384-0148. Apple.

Beo's Club 21. (408) 899-5169. Fun board, all welcome.

The Exchange. (408) 659-3078. Geneology mainly. Also IBM.

Hacker's Heaven. (408) 375-5455. Sponsored by Pro-Log Corp. Supports STD-Bus, MS-DOS, CP/M.

Jumpin. (408) 394-8842. Operated by Monterey Area PC-jr. Users Group.

User's Port. (408) 394-3917. Commodore with CBM color/graphics. Runs C-Net.

The Student's Board. (408) 227-2741 8-N-1. 1200 24 hrs. Nine conference areas, several hundred PD files, multiplayer on-line games, free but registration required. Created for students but has many topical areas. Sysop: Gary.

The Strong Hold. (408) 338-6220. 24 hrs. 80 games on line, over 50 megs. Sysop: Spuds MacKenzie

Comp-U-Ease. (408) 286-8332. 24 hrs. Multi-line, engineering, ACAD, LAN. No games or picture files. Sysops: Stuart Smith and Ed Hwang.

Liberty Bell BBS. (408) 243-1933. 300/1200/2400 24 hrs. Discussion of current events/issues relevant to libertarians. Private areas for libertarians, public areas incl. EchoMail and NetMail. Sysop: Bob Bickford.

Soquel BBS. (408) 462-6329. 300/1200/2400 8-N-1 24 hrs. Sysop: Dick Steele.

PC3 BBS. (408) 263-9015. 1200 8-N-1 7 days. PC3 product info. Sysop: Bill Todd.

Computer Tyme Gap BBS. (408) 732-2353. 2400 24 hrs. 7 days a week. Alpha site for Gap BBS software. Sysop: Gary Araki.

Western CBoard. (415) 664-2067. 300/1200/2400 8-N-1 24 hrs. Programmers information, Pascal, C, dBase, Assembler. Sysop: Robert Baker.

SCRIBE (M). (415) 256-1389. 300/1200 8-N-1 24 hrs. All computers welcome, but call often to remain active.

SIGSIG. (415) 968-7369. 300/1200/2400 24 hrs. MS-DOS & CP/M files, 108 MB online, messaging and more. Featuring Auntie BBS software. No fees, immed. access. Sysop: Jim Switz.

SFPCUG. (415) 621-2609. 1200/2400 8-N-1 24 hrs. IBMs, clones and compatibles. Message board/info exchange. 100's dl files. Call (415) 221-9166 for recorded info. Sysop: Richard Couture

SuperResume Fido. (415) 546-0119. 300/1200 8-N-1 24 hrs. A free resume composition and career strategy service for software engineering professionals. Job listings. Voice: (415) 788-6000.

Bunny Bell BBS. (415) 651-6988. 300/1200 8-N-1 24 hrs. Registration required. C-64 oriented/operated. Messages, story board, war room, dating, merchandise section. Voting, archival backups for C-64, U/L and D/L of PD.

Easy Access BBS. (415) 829-6027. 300/1200/2400 8-N-1 Sysop: Tony Waddell.

Small Business Connection. (415) 898-3620. 300/1200 8-N-1 24 hrs. For people with a small business or who want to start one. Member/private electronic mail, PD software/shareware; (415) 898-3620 for info.

Christian BBS. (415) 388-4801. 300/1200/2400 N-8-1 24 hrs. Free to all. Sysop: Bill Sievert.

VRS BBS. (408) 757-6683, 300/1200/2400, 24 hrs. For IBM and others. We may have just what you're looking for. Sysop: Dikran Garabedian.

The Student's Board. (408) 227-2741. 8-N-1. 1200, 24 hrs. Nine conference areas, several hundred PD files, multiplayer on-line games, free but registration required. Created for students but has many topical areas. Sysop: Gary.

415

ABACUS - Atari Bay Area Computer Users Society. (415) 587-8062. 300/1200 24 hrs. Free messages and downloads for 8-bit & ST users. Sysop: Ed Van Pelt

AIDS BBS. (415) 626-1246. 300/1200 24 hrs. Free. All welcome. Mail send/receive on AIDS: please not on other subjs. due to time & access limitations. Library. Sysop: Ben Gardiner

Amiga Addicts Anonymous (AAA). (415) 222-9416. 300/1200 24 hrs. Amiga Chat & Pub. Dom. files. Sysop: Randy Spencer

AUGment - Amiga Users Group of Silicon Valley. (415) 659-9169.

Back Door. (415) 756-6238. 300/1200/2400 8-N-1 24 hrs. Alternative lifestyles information. IBM clone library. Voice validation required for access.

Bay Area's Luv Connection. (415) 387-0529. 8-N-1. Multiline private chat, matchmaking, E-mail, SIG's & numerous pub. boards.

Boot to the Head. (415) 352-5411. 300/1200 8-N-1 24 hrs. Multiplayer games only. Pyroto, Tradewars Taskforce & more.

Catholic Information Network - Santa Clara County. (415) 967-3420. 300/1200 8-N-1 6 PM-8 AM. PC pursuitable through (408) through Santa Clara BBS. No access charge. People of all faiths welcome.

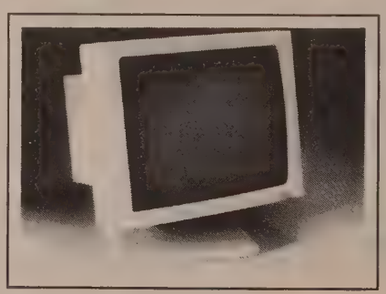
Catholic Information Network - SF. (415) 387-3251. 300/1200 8-N-1 24 hrs. PC pursuitable. Active

MONITERM

The Technological Leader in Monochrome and Color Display Systems

NEW VIKING 2400 (24") MONOCHROME MONITOR

Big Screens for PCs and Macintoshes



Viking 1

▶ **Viking 1 - Desktop Publishing**

The 19" Viking 1 monitor, for the IBM PC, XT, AT, PS-2, compatibles and Apple Macintosh SE and II, turns your computer into a powerful Desktop Workstation with a full two pages of text, high resolution graphics, and CAD drawings displayed on one screen. A true "What You See Is What You Get" (WYSIWYG) format allows you to review and edit your working document on the screen, ***before*** you print. The graphics controller allows you to execute functions exceedingly fast, for increased productivity. A system that improves every aspect of monitor performance, and provides cost-justifying benefits, over and over again.

"IBM," "PC," "AT" and "XT" are registered trademarks of International Business Machines, Inc.

Viking 10

▶ **Viking 10 - High Resolution CAD/CAM**

The Viking 10 color monitor, for IBM PC, XT, AT compatibles and Apple Macintosh II is a vital productivity tool for the new generation of personal workstation users. A 1024x768 display format, refreshed at 60 Hz (flicker-free), produces large screen, life-like images on a 19" light-weight monitor. Using the Hitachi ACRTC chip on the Viking controller board provides high speed graphics control. Efficient character mode operations and sophisticated graphics functions are combined in the same program.

Apple, Macintosh SE, Macintosh II are trademarks of Apple Computer, Inc.

Cypress Distributing Company®

560 Lincoln Avenue
San Jose, CA 95126
(408) 297-9800

22186 Rim Pointe
El Toro, CA 92630
(714) 770-7244

2670 Truxel Road
Sacramento, CA 95833
(916) 646-1955

Quinnax Emerson Century Data Systems
Packard Bell Personal Computer Products
Panasonic Seikosha C. Itoh Fujitsu Star Micronics
Mitsubishi Rutishauser Canon

ARGO COMPUTERS 20/20 WARRANTY FREE!

EVEREX FOR EXCELLENCE!

20/20 WARRANTY SPECIAL!!!/FREE EXCHANGE GUARANTEE!!!

ALL EVEREX 80286/80386 SYSTEMS SALE!
ONE MONTH ONLY! JULY 15 - AUGUST 14TH. OPEN 7 DAYS!

We Are Offering Extended IN-STORE 20 MONTHS PARTS and 20 MONTHS LABOR LIMITED WARRANTY ON ALL EVEREX SYSTEMS

EVEREX INTEL 80286 SYSTEMS

ARGO 80286/10Mhz MONOGRAPHICS SYSTEM WITH SEAGATE 20MB HD **$1333**

FULLY COMPATIBLE WITH IBM AT!

PRICE INCLUDES: 512K RAM (Upgradable to 16MB), 1.2MB Floppy, 2 Floppy/2 Hard Disk WDC Chipset 16 Bit Controller Card, Everex Hi-Res 80/132 x 44 Fully Hercules Compatible Monographics Video Card, Printer Port, AT STYLE 101 Key Best Quality Keyboard, 8 Expansion Slots (6-16 Bit, 2-8 Bit), 72 Hours Complete Testing/Burn-in, Over 200 Pages Hardbound easy-to-read detailed manual & Documentation with Glossary, Anti-Glare Hi-Res Monographics Monitor, AND SEAGATE 20MB HARD DRIVE. All necessary system cables. System Fully ready for your use. **MADE IN USA** by **EVEREX** SYSTEMS, FREMONT, CA. USA **AND OUR EXCLUSIVE 20/20 PARTS & LABOR WARRANTY!**

ARGO 80286/10Mhz EGA SYSTEM WITH 20MB SEAGATE HD. **$1616**

PRICE INCLUDES: Same System/Features as Monographics System (left), except with Hi-Res 752 x 410 Everex EGA AUTOSWITCH EGA Card, and EVERVISION HI-RES CGA/EGA MONITOR. (Also Please See OPTION Below), AND 20MB SEAGATE HARD DRIVE.

ARGO 80286/10 Mhz 0/1 WAIT STATE MONO/EGA SYSTEM **$1488/$1777**

PRICE INCLUDES: SAME SYSTEM/FEATURES AND 20/20 WARRANTY as above Systems, except: 10Mhz — Zero or ONE wait states operation, and these systems have 2 Serial RS 232 & 1 Parallel Printer Ports.

EVEREX INTEL 80386 BUSINESS/PROFESSIONAL SYSTEMS

ARGO 80386/16Mhz MONOGRAPHICS SYSTEM WITH 42MB SEAGATE HD **$2288**

PRICE INCLUDES: 1MB RAM/64K CACHE, 16Mhz ZERO & ONE WAIT STATE OPERATION, 1.2MB FLOPPY, Floppy/Hard Disk Controller, 42MB SEAGATE Hard Drive, EVEREX Hi-Res 80/132 x 44 Fully Hercules compatible Monographics Video Card, Hi-Res Anti-Glare Monographics Monitor, and **20/20 Warranty.**

ARGO 80386/16Mhz EGA COLOR SYSTEM WITH 42MB SEAGATE HD. **$2577**

PRICE INCLUDES: Same System/Features as Monographics System (left), except with 752 x 410 EVEREX EGA Autoswitch EGA Card and EVERVISION CGA/EGA Monitor, and **20/20 Warranty.**

EVEREX 80386 — 20Mhz ON DEMONSTRATION/IN STOCK!

SYSTEM OPTIONS

1. 640KB RAM upgrade for above 512K Systems **$89.**
2. BETTER! NANAO 8060S .28MM DOT PITCH MULTISCAN Monitor (instead of EVERVISION MONITOR) **$199.**
3. EVEREX 800 x 600 Resolution EGA Video Card (instead of 752 x 410) **$59**
4. MS DOS/GW BASIC 3.3 with system purchase **$88.**
5. EVEREX VGA Video Card (instead of 752x410 EGA Card) **$149.**
6. ON-SITE Service Available at reasonable competitive charge.
7. Phone technical support available at reasonable charge.

PLEASE NOTE:

1. All 20/20 Warranty systems are fully configured/tested. For extended 120 Hrs., Burn-in (for additional reliability and your protection), AND Hard Drive FORMATTING: Ready-to-use, please add 3% labor cost to above system prices.
2. We will exchange the system for an equal or higher priced our advertised system within 30 days of purchase.
3. All Advertised Prices Reflect a 4% Cash Discount. All Prices Subject to Change Without Notice.

*SEAGATE HD 20/20 WARRANTY FREE!**

20 MONTHS PARTS & 20 MONTHS LABOR WARRANTY FREE!*
SPECIAL SALE ENDS JULY 30, 1988

• XT KITS:

20MB	30MB	42MB	65MB
ST-225	ST-238R	ST-251	ST277-R
65 Msec	65 Msec	38 Msec	38 Msec
$255	**$277**	**$444**	**$555**

• FOR AT (Drive Only)

20MB	30MB	42MB	65MB
$209	**NA**	**$388**	**$*** **

***ST277R WITH 1:1 INTERLEAVE, 16-BIT AUTO CONF. RLL CONTROLLER. CARD ONLY **$177.**

*20/20 WARRANTY ONLY AVAILABLE IF HD PROFESSIONALLY INSTALLED BY US.

INSTALLATION: **XT $29, AT $49**

• **XT Kits Include:** HD, Cont. Cd., Cables, Installation, H'ward, Instructions. ALL KITS Brand New, Factory Tested/Formatted.
• One Year Warranty still available for over-the-counter and mail order sales • Pre-paid orders shipped UPS Daily • Please include $9.00 for shipping/handling for mail orders.

OPEN 7 DAYS!
M-F 10 AM/6 PM, SAT/SUN. 12-4 PM
Tel. 415-276-2211 FAX: 415-276-2368

FOR TANDY—SEAGATE 20MB HD KIT $319.
IBM PC-1, (64K) UPGRADE ROM/BIOS IN STOCK!

15099 Hesperian Boulevard, San Leandro, CA 94578 • FAX 415-276-2368 Phone: Sales (415) 276-2211—Retail
DEALERS/RESELLERS 415-683-2938 • (415) 683-2361 • CORPORATE/GOVERNMENT BUYERS (415) 276-2360

HOURS: Mon.-Fri. 10AM-6PM
Sat. & Sun. 12PM-4PM

TERMS: VISA/MASTERCARD, Cash/Certified Funds, Personal/Company Checks/P.O.'s Accepted.

80386 SYSTEM

- 20 MHz O Wait State Speed
- 1 MB memory expandable to 2 MB, 80287/80387 socket
- 200 W power supply
- 1.2 MB floppy disk
- Hard disk & floppy controller
- Enhanced 101 keyboard
- 2 serial/2 parallel
- Built in EGA board
- Printer port
- 32 bit slot

Only $2150

8088 TURBO COMPLETE MONO SYSTEM

- 4.77/8 MHz 256K RAM
- 360K floppy drive
- Hi-Res MPG
- 84 key keyboard
- 150 W power supply
- Hi-res mono monitor
- One year warranty

$429

NO HIDDEN COST
READY TO RUN!

10 MHz System $449

6/10 MHz O-WAIT MONO 80286 SYSTEM

- 512K RAM Exp to 1 MB on motherboard
- 1.2 MB drive
- FD/HD controller
- 200 W power supply
- Hercules compatible mono card
- 84 key keyboard
- High-res mono monitor
- One year warranty
- OS/2 tested

$865 BABY AT SYSTEMS AVAILABLE

NO HIDDEN COSTS
READY TO RUN!

6/12 MHz 286 SYSTEM $945

*HANDS-ON WORKSHOP "Build Your Own Computer & Save"
—Covers 8088/80286/80386 Systems
—No computer experience required. Registration Fee: $15.00. Seating Is Limited So Call Now To Reserve Spot. Other Training Courses Available:
—Computer concept and DOS, spreadsheets, wordprocessing database.

ADD ON BOARDS

Monochrome graphics/Printer port	$45
Color graphic card/printer port	45
Everex micro enhancer EGA	125
Everex Super EGA (800x600)	145
Floppy controller 360/720K	22
1.4/360 floppy controller	45
RS-232 card	22
80286-I/O card (S,P,G)	45
Hard disk controller + cable	55
80286 FD/HD dual controller	105
DTC RLL controller AT	149
80286 Everex 3 MB RAM card	84

MONITORS

Samsung Mono	$68
Samsung EGA	325
Goldstar Mono	60
Relisys EGA	339
NEC Multi-Sysn (II)	565

KEYBOARDS

Keytronics 101	$49
MIT (AT style)	36
BTC 5339 enhanced	49
Maxi-Switch 84/101 key	54/65

DISK DRIVES

Fujitsu 360K/1.2MB	$65/80
Teac 360K/1.2MB	75/89
Toshiba 3.5" drive (720KB)	85
Toshiba 3.5" (1.44 MB)	125
20 MB ST-225 kit	255
30 MB ST-238 kit	279
ST-225 (20MB)	205
ST-238 (30MB)	225
ST-251 (40MB	345
ST-4096 (80MB)	640

PRINTERS

Ricoh daisywheel (22 cps, 132 col)	$199
Epson LQ 500	355
Panasonic 1091i	209
NEC P2200 24 pin	339
Epson LX-800	200
Star NX-1000	185

SYSTEM BOARDS

8088 4.77/8 MHz turbo motherboard (OK)	$68
10 MHz turbo motherboard (OK)	78
80286 6/10 MHz O wait M/B	239
80286 6/12 MHz O wait state MB w/80286-12 CPU	289

COMPUTER CASE

XT style case	$27
AT Jr. case XT	32
Tower case	250
AT style case	55

MISC.

DOS 3.3	$83
6' printer cable	5.50
Keyboard drawer	29
Power station	19
Printer switch box (AB/ABCD)	20/29
Logic mouse C7/Bus mouse	69/75
Keyboard extension cable	8
Monitor extension cable	8
Mouse pad	6
Joystick	19
Surge protector	9
Modem Int. 1200	60
Modem Int. 2400	120
Modem Ext. 1200	75
Modem Ext. 2400	159

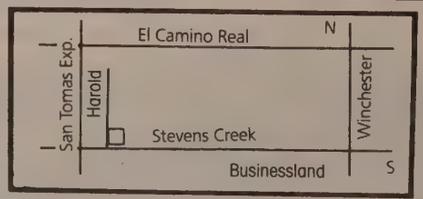
COMPUTER SPOT Inc.
(408) 246-7701

We Do System Repairs,
Diagnostics & Upgrades On Your
PC/XT/AT/80386

*IBM, XT, and AT are registered trademarks of IBM, Inc.

Mon-Fri: 10-7:30
Sat: 10-6

3575 Stevens Creek Blvd.
Suite E
San Jose, CA 95117



DEALER INQUIRIES WELCOME

conferences. Simple registration, no access charge. People of all faiths welcome.

Charisma. (415) 349-6576. 1200/2400 8-N-1 24 hrs. Paradox, dbase, IBM utics. 3500 files. Sysop: Tom Swegles

Commodore Connection. (415) 458-1005.

Dial-Your-Match. (415) 964-3255. Mountain View.

Dial-Your-Match. (415) 991-4000. Daly City.

Dial-Your-Match, #34I. (415) 537-0666. 300/1200 24 hrs. Nationally networked, meet the 250 callers in the date-a-base. Sysop: Matchmaker 2

Dr. Don's. (415) 885-1973. 1200/2400 24 hrs. Discussion; ComputerTalk; BMW-CarTalk; SportsTalk; BoardRoom. Sysops: Dr. Don, Bimmer Pilot

Epson Users of SF Bay Area. (415) 467-2780.

Family Radio Forum - Oakland. (415) 562-5483. 300/1200/2400 8-N-1 24 hrs. Download pub. software & entire bible texts. Echo conferences on parenting, teens, singles, etc. Christian BBS for all. Sysop: Richard Yim

Family Radio Forum - Sacramento. (415) 562-5483. 300/1200/2400 8-N-1 24 hrs. Download pub. software & entire bible texts. Echo conferences on parenting, teens, singles, etc. Christian BBS for all. Sysop: Richard Yim

Family Radio Forum - San Jose.(415) 562-5483. 300/1200/2400 8-N-1 24 hrs. Download pub. software & entire bible texts. Echo conferences on parenting, teens, singles, etc. Christian BBS for all. Sysop: Richard Yim

File Exchange. (415) 647-0505. 300/1200 8-N-1 24 hrs. MAC-based, mostly MAC but other types of computers welcome. Discuss problems & tips related to various programs.

Fremont Area Remote Terminal. (415) 791-2961. 300/1200/2400 24 hrs. MS-DOS & color computer downloads. Free!

Guideboard. (415) 864-3858. 300/1200/2400 24 hrs. Cabbie's Guide to SF. Where to go for restaurants, doctors, auto repair, etc. Resident Astrologer: Swami Tommy. Sysop: Dick Schwartz

Henari. (415) 855-9548. 300/1200/2400 BBS serving the Bay Area Jewish Community, linked to Israel via FidoNet.

MacCircles. (415) 484-4412. 2400 8-N-1 24 hrs. Files; support; congenial conversation. Sysop: Patricia O'Connor

MailCom. (415) 855-9548. Silicon Valley's 1st Mac BBS on FidoNet. Part of EchoMac & BayMac Network. 90 megs, FidoNet/USENET connections.

Med-Link. (415) 845-8649. 300/1200/2400 8-N-1 24 hrs. Medical, health, computer topics.

Model 100, 102, & 200 Support. (415) 939-1246. 300/1200 8-N-1 24 hrs. Ongoing support for Tandy/Radio Shack Model 100, 102 & 200 owners. Int's support by mail, voice, & BBS.

Mouse-Trap. (415) 969-5486. 300/1200/2400. MS-DOS; files; messages; online games.

Nightengale. (415) 731-2422. 300/1200. A nursing BBS open to all. XT/PC clone MS-DOS.

Open Campus. (415) 895-0135. 300/1200/2400 24 hrs. GBBS/CMS sys. op. by San Leandro HS/Apple Eaters UG. 30 MB, 34 message bases; CMS intersys. E-mail. Library, downloads. Sysop: Robert Shayler

POPnet Berkeley. (415) 527-4510. Multi-line fun & games for all. Not free but cheap.

POPnet San Ramon. (415) 830-1191. Multi-line fun & games for all. Not free but cheap.

POPnet Walnut Creek. (415) 932-4263. Multi-line fun & games for all. Not free but cheap.

Program/Land. (415) 327-6197. 300/1200/2400 24 hrs. Pub. domain BBS - supports all telecommunication protocols. Alt. BBS - (415) 327-6198. Sysop: James Arnold

SF Robotics Society. (415) 752-7228. 300 24 hrs. Extensive robotics & hardware bibliography. Calendar of events.

SFPCJr. (415) 997-4874. 1200 8-N-1 24 hrs. Sysop: Larry Buoncristiani

SFPCUG. (415) 621-2609. 1200/2400 8-N-1 24 hrs. Emphasis on IBM & compatibles. Message board & info exchange. Dozens of downloadable files. Sysop: Richard Couture

SNLNDRO. (415) 895-1785. 300/1200 N. Cal HUB for CMS School Network. Op. by San Leandro HS for CUE & educators. 5MB. Sysop: Robert Shayler

Telenaut DIBBS. (415) 388-4007. 1200/2400 8-N-1. The Graphics Meeting Place where professionals from graphic arts, publishing & computer graphics meet. MS-DOS software.

The Apocryphal Code. (415) 347-2618. 300/1200 8-N-1 24 hrs. Sysop: Dave Brody

The DogLab. (415) 594-9806. 2400 24 hrs. Large file library; several echomail conferences.

The Flea Clinic. (415) 592-4060. 2400 24 hrs. Large file library; several echomail conferences.

The Pilgrim. (415) 731-2422. 300/1200. Spirituality, Catholic nursing. Spiritual development for homosexuals from a Catholic perspective. Oriented to UCSF.

The Switch. (415) 578-1919. 300 24 hrs. Free online entertainment, brought to you by Interactive Productions.

The Wasteland. (415) 479-4520. 300/1200. Debate, discuss & intellectualize. Private mail, computer SIG's. Friendly Sysop.

T-Room. (415) 756-6235. 300/1200/2400 8-N-1 24 hrs. Alternative lifestyles information & fun. Macintosh library. Voice validation required for access.

Video Vision - The Graphic Library. (415) 366-6409. 300/1200/2400/9600 8-N-1 24 hrs. A color BBS mainly for graphics, arts & games. User must read bulletin 1 or download "POLICY.TXT" and FILELIST.ARC". Sysop: Roel Sarceno

Wetware Diversions. (415) 753-5265. 300/1200/2400 24 hrs. Multi-line, UNIX based system for conferencing & gaming. Running PicoSpan. Sysop: Christopher

YET ANOTHER BULLETIN BOARD!. (415) 689-8952. For IBM's & TRS-80's. Novices welcome! Sysops: Jim & Alex Stewart

CIRACS Network. (415) 463-2185. 300/1200 24 hrs. SIG to human service providers working in youth, drugs, alcohol & AIDS prevention & treatment. Sysop: Janet Morgen, MPH

Emerald Lake Fog #48. (415) 365-2650. 300/1200/2400. No fee; immediate access, CP/M & DOS.

Foothill College Science And Engineering BBS. (415) 941-5725. 300/1200/2400 24 hrs. Educational Program Information. Sysop: Long Tran

Kortek. (415) 327-4589. 110 to 9600 8-N-1 24 hrs. PD BBS for IBM & MS-DOS computers. Free. Looking for new members with new ideas to be a better board.

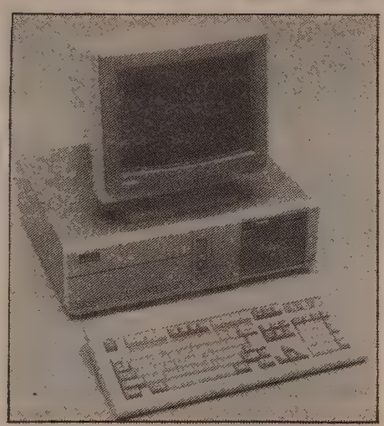
Marin-Sonoma PC Users Group (MSPCUG). (415) 927-1216. 300/1200/2400 24 hrs. IBM PC software & talk. Biz application oriented, official electronic voice of one of most influential user groups.

Railbird's Racing BBS-100. (415) 278-0767. 300

TOKYO ELECTROLAND

FULL SALES & SERVICE OF ALL COMPUTERS

80286 SYSTEM



System comes equipped with 1 drive, 512K (100ns) w/1.2MB, 10 MHz, 101 enhanced keyboard (2nd & 3rd drives optional
Our guarantee to you is 1 year parts & labor.

$999

Mitsuba

A NAME TO REMEMBER

DIRECT FROM JAPAN

8088 SYSTEM

System comes equipped with 1 drive,
640K RAM, 10 MHz.
Our guarantee to you is 1 year parts & labor

From **$699**

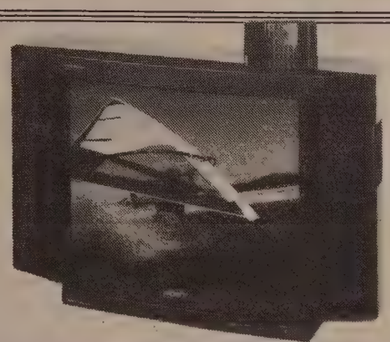
We Carry All Your Major Hardware Needs!

SONY TV

27" Tritron® Surround Sound Stereo Monitor/Receiver

Microblack™ Trinitron Picture Tube
Front Hi-Fi Stereo Speakers
Dual Side Reflecting Surround Speakers

$998



COMPUTERS

Compaq 286/12 MHz	from $1750
Toshiba T1000/1200	725/Lowest Price
AST Premium 286 w/40MB (Including Monitor)	2195

DRIVES

Seagate 20 MB Kit	$275
Seagate 30 MB	315
Seagate 4038 30 MB	Call
Seagate 40 MB	395
Teac 360K/Fujitsu 360K	95/77
Miniscribe—All Models	Call
Hardcard + 20 meg	549

HARDWARE

Hayes 1200B/2400*	Call
Everex 1200B/2400B	$88/185
Everex EGA Cards	Call
ATI EGA Wonder	229
Vega Video 7"	Call

*Limited Quantity

PRINTERS

LX-800	$188
EX-1000 Closeout	548
LQ 850/1050	559/Low
LQ 500 New 24 pin	Best Price
NEC P2200	339
Panasonic All Models	Call
HP Laser Jet Series II	Lowest
HP Deskjet	799

650 Mission Street
(At New Montgomery)
San Francisco

Store Hours:
Mon-Fri 10:00-6:30
Sat 10:00-5:30

All computer prices reflect cash discounts. We accept Visa/MasterCard on non-sale items. Prices subject to change without notice.

(415) 777-2100

8-N-1-E 3-8 AM. Offering Dialy handicap of races we feel we can beat. Trouble & Lasix list too. News on sports & much more!

Video Seven Bulletin Board. (415) 656-0503. For owners of Video Seven VEGA graphics products. Updates and Support.

Recovery BBS. (415) 441-2539. 300/1200/2400. Message sections include Alcoholics Anonymous, NA, CA, Alanon/ACA, SA, SLAA & others.

tsunami bbs. (415) 726-2726. 300/1200/2400 24 hrs. Graphics compatibility theme. GIFs, MacPaints, etc. Free!

Everex Technical Assistance BBS. (415) 683-2924. 300/1200/2400 8-N-1 24 hrs. For Everex products. Oriented toward helping programmers write software that takes advantage of Everex's special features.

SFPCUG BBS. (415) 621-2609. 1200/2400 8-N-1 24 hrs. Emphasis on IBM & compatibles. Initial log-on open, thereafter open only to group members. Phone(415) 221-9166 for SFPCUG info. Sysop: Richard Couture

Earth-Rite BBS. (415) 651-9496. 300/1200 8-N-1 24 hrs. Forum for New Age, Eastern and Pagan philosophies and religions. Non-traditional philosphical and religious discussions.

Dail Your Match #56A. (415) 964-3255. 300 8-N-1 24 hrs. E-Mail, 5 public boards, match functions. No Fees.

The Billboard. (415) 686-4338. 300/1200 2AM to 8PM. In Concord, CA. Mostly Mac, but open to others. Red Ryder host. Great support, files, message areas. Sysop: Bill Maginnis

Bytes Are Us. (415) 489-2236. 300/1200/2400 8-N-1 24 hrs. MS-DOS only, Free. Union City. Sysop: Burke Telford

Matchmaker #417.(415) 843-8788. 300 24 Hrs.Sysop: Matchmaker

SuperResume Fido.(415) 546-0119. 300/1200 8-N-1 24 Hrs. A free resume compositon and carrer strategy service for software eng. professionals. Job listings. Voice: (415) 788-6000.

Western C Board. (415) 664-2067. 300/1200/2400 8-N-1 24 Hrs. Dedicated to programming languages: C, Pascal, Assembler, Prolog. Chat & private node. Sysop: Robert Baker

Dating Tree. (415) 656-1700. Adult dating subscription multi line BBS. Live chat w/16 lines. Fremont.

Buccaneer Bay Man O' War. (415) 797-9705. 300/1200 24 Hrs. Fun, information and entertainment. All computers welcome. Multi-chat. Sysops: Grey Beard and Lady.

Microworld. (415) 845-1789. Atari ST oriented, but any computer may call. Running on an ST w/30 MB hard drive. No Charge. Sysops: Damian Warner and Rick Call

Emerald Lake Fog #48. (415) 361-1847. 300/1200/2400/9600. General info. DOS and CP/M. 232 MB. Wildcat BBS. Sysops:Dick Worth and Doug Spence

COTE. (415) 924-3725, 300/1200.

AnswerLine FIDO. (415) 365-3436, 300/1200/2400, 8-N-1, 24 hrs. 70Mb of files for IBM, Macintosh, Apple II GS, Amiga. International FidoNet mail. Sysop: Gary Klein.

516

Pal-East. (516) 665-1851. 300/1200/2400 8-N-1 24 hrs. Multi-line, E-mail, live chat on-line, Public Boards & library. Geared to alternate lifestyles Sysop: Scott

619

Dial-Your-Match. (619) 428-0318. Imperial Beach.

Dial-Your-Match. (619) 741-1377. Escondido.

Dial-Your-Match. (619) 746-6751. Escondido.

707

911 Emergency Services. (707) 664-1639. 1200/2400 & 9600 Fastco 24 hrs. Oriented to emergency service employees: fire, police, EMS, & interested public. Free.

North Bay Billboard. (707) 552-9758. 300/1200/2400. IBM, Mac, Atari ST, 20 Megs. In Vallejo.

Cyborg—64. (707) 526-6464. 300/1200/2400. Online user group suporting C64, C128, Amiga. 65 MB online!

The Power Station. (707) 552-0462. 300/1200/2400 8-N-1 24 Hrs. Supports IBM & compatibles, Apple, Atari. Utilizing Wildcat.Vallejo. Sysop: Joe Martin

Carenet. (707) 778-2341. 300/1200/2400 24 Hrs. A social concerns BBS.Listing non-profit & gov't asst agencies free. Profit agencies $12/yr. Mean 18 conference as well. Sysops:Tery & Gina Gefael

Survival Forum. (707) 545-0746. 1200/2400 Fido 125/7. Topics: Medicine, Science, Ham Radio, U.N. News. 'Nam Vets, Genealogy, Survival & more.

Solano Community BBS. (707) 437-6787. 300/1200/2400 8-N-1 24 hrs. Easy access board on a national and worldwide network. Sysop: Ed Winters.

Santa Rosa Commodore Users Group BBS. (707) 526-0924, 300/1200, N-8-1, 24 hrs. Four boards, public discussion, C-64/128, GEOS, DIPLOMACY game, text files, up/downloads. Sysop: Dave Willey.

Amiga Magic Information Center. (707) 579-0523, 300/1200/2400.

Aviators Express. (707) 546-4721, 300/1200/2400.**BBS Express.** (707) 583-3586, 300/1200. Fee required.

CC-BBS. (707) 792-0963, 300/1200

Computer Chip. (707) 433-6817, 300/1200.

Cyborg-64. (707) 526-6464, 300/1200.

Decor Computer Consultants. (707) 746-5820, 300/1200/2400.

Directory Assistance. (707) 538-8710, 300/1200/2400.

Earthsea. (707) 539-0227, 300/1200/2400.

Emergency. (707) 664-1639, 300/1200/2400.

Far Side. (707) 528-7902, 300/1200.

Farthest Shore. (707) 938-2997, 300/1200/2400.

Gold Coast. (707) 431-2632,300/1200.

Grapevine. (707) 546-4938, 300/1200/2400.

Graveyard. (707) 526-0193, 300/1200, 9 PM to 9 AM.

IBM PC UG of the Redwoods BBS. (707), 546-4938, 300/1200/2400.

Metropolis. (707) 528-1345, 300/1200, 24 hrs. Comic books, superheroes, science fiction, contests, fantasy, role-playing games, media forum and prizes.

Missing Link. (707) 585-0759, 300/1200.

Nite Owl Motel. (707) 823-3052, 300/1200/2400, 9 PM to 8 AM. Network.

NONVON. (707) 579-9437, 300/1200/2400. Unix game.

PC Pipeline. (707) 433-2726, 300/1200/2400.

Rapture. (707) 585-9307, 300/1200.

SCRA/HSC. (707) 527-7734, 300/1200/2400.

SCF. (707) 545-0476, 300/1200/2400. Network.

Small Babble Board. (707) 527-5699, 300/1200.

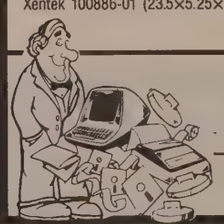
Power Supplies

Switcher

AcDc Electronics RS5N10-102-Enclosed (7×4.5×2.5) +5V @ 10A $19.95
Astec (7.75×4.25×2) AA11261 +5V @ 6A, +21V, ±25V or +28V @ 1A, +25V @ .2A $19.95
Astec AC8353 (6.25x7.50x2) +5V @ 3A, +24V @ 2.2A, −12V @ .17A $19.95
Boschert OL400-3015R (18.87×5.2×3.0) +5V @ 5A, −5V @ 2.5A, +12V @ 4A, −12V @ 4A, +24V @ 3A $49.95
Boschert XL45-3601 +5V @ 5A, +16 @ .2 ..... $29.95
Boschert 80020-01 20W (5×3×1) +5V @ 2.2A, +12V @ .35A, −12V @ .35A $12.95
Boschert 80015-0 20W (5×2×1) +5V @ 2.2A, +12V @ .35A, −15V @ .35A $12.95
Compower OL-50/65 (7.75×4.25×2) +5V @ 6A, +28V @ 1A, −5V @ .7A $19.95
CSS 83DA/8922 Open (5.5×3.5×1.5) +12V @ 2A $15.95
Data Power 15A0193-005 (6.25×10.75×2.5) 110 VAC +5V @ 16A, +24V @ 6A, +12V @ 8A, +12V @ 4A $59.95
Deltron Q250 (13.5×2.5×4.75) +5V @ 30A, +12V @ 4A, −12V @ 4A, +24V @ 4A $59.95
El Pac Power Systems MASS-210-3 (13×5×2.5) +5V @ 15A, +12V @ 6A, −12V @ 1A, −5V @ .5A $29.95
Pioneer Magnetics PM2675A-2-3 (10.75×5×8) +24V @ 10A, +12V @ 4A, +5V @ 5A $70.00
Pioneer Magnetics PM2497A-2 (11×8×5) +5 @ 100A $75.00
Xentek 80-0068-001, 110 VAC, +12V @ 1A, −12V @ 1A, +5V @ 12A $29.95

Linear

AcDc Electronics 5N5.7-1-E, 220V Only, 5V @ 5.7A $18.00
Computer Products PL161-001 (7×5.75×2.5) ±15V @ ±1.5A $24.95
Condor CP564 Open (10.5×3.5×6.5) −15V @ 6A, −5V @ 6A, +24V @ 4A, −12V @ 1A $29.95
International Power IHC12-3.4 (4.87x5.62x2.5) +12V @ 3.4A $19.95
Lambda LYS-W-28 (5×9×3) 28V @ 9.5A $39.95
Lambda M-YSW-2 LYS-W-28 ..... $19.95
Lambda LOS-X-5 Open +5V @ 9A $19.95
Lambda LOS-X-12 (7×2.5×4.75) 12V, ±5%, 5A @ 40°C $29.95
Power One CP205 Open +24V @ 1.5A, +5V @ 1A, −5V @ .5A $15.95
Soresen STM5-36 (14×5×3.5) 4.5-6V @ 36A $54.00
Soresen 15-10 (9.5×5.25×3.5) 13-17V @ 10A $45.00
Standard Power 30B20H Unregulated (2.75×5.25×2.4) 12V @ 1.5A $8.95
Xentek 100886-01 (23.5×5.25×5.25) ±5V @ 5A, ±121V @ 1A, −50V @ 1A $19.95



Computer Surplus Store
715 Sycamore Drive, Milpitas, CA 95035
408-434-0168 FAX: 408-434-0931
MAIL ORDER: 408-434-1060
9:00 a.m.–3:00 p.m. PST

EFI'S
Discount Computers

Complete systems from:
AST RESEARCH INC. · WYSE · ZENITH · AT&T · IBM · ACER COMPUTERS & LASER PRINTER · CITIZEN · COMPAQ · TOSHIBA · NEC · NCR · SAMSUNG · EVEREX COMPUTER SYSTEMS DIVISION · SPERRY · SHARP
XT/AT 386 CLONES

SOFTWARE

Lotus 1-2-3	299
Word Perfect 5.0	229
dBase III+	389
Ventura	489
Paradox II	419
Norton Utilities/Advance	59/85
Turbo C	63
X-Tree	49
FastBack	99
QNA 3.0	205
Generic CADD	59
PageMaker	419
Quattro	$CALL
MS Word	225
Smart w/Spellchecker	479

DISK DRIVES

20/30 MB w/contr.	299/329
Half ht./Full ht. drives	$CALL
Plus 20/40 MB Hard Card	569/709
Archive 40MB tape BU	355
WD file card 20/30MB	399/429
40 MB half ht./Full ht.	399/559
Bernoulli Boxes	$CALL

SUPPLIES

3M DS/DD Diskettes	8.95
Dysan Hi Dens	19.95
Ribbons/Chips/Paper	$CALL

HARDWARE

Vega Deluxe/VGA	209/299
Paradise EGA/EGA 480	149/175
Genoa EGA/VGA	219/459
Six Pak 64K	129
Irma Board II	795
Intel Above PC/AT	255/379
Orchid Tiny/286E	295/739
Hayes modems	$CALL
Everex 1200B Modem	89
Hercules color/mono	$CALL
Generic mono/color/EGA	89/159
8087/80287	115/179
Intel PC 386	835
MS bus/serial mouse	105

PRINTERS

Citizen 120 D/Premier 35	169/469
HP Series II w/toner	$1745
NCR, Canon, Quad Laser	$CALL
Automatic Printer Switch	69
Epson, Toshiba, Brother, NEC, Primages, Diablo, ALPS Okidata, RCA, Panasonic	$CALL

MONITORS

Sony/Mitsubishi/Zenith/Seiko	$CALL
Amdek 410A/722	149/469
NEC Multisync/+	619/999
Samsung Amber/EGA	85/379
Magnavox CGA/EGA	279/379
Everex EGA	369

Canon and Sharp fax machines now available.
Free delivery and installation of systems within 30 miles.
Free in-store installation of any product.
Prices reflect 3% cash discount.
CALL US FOR YOUR PRICE ON ANY PRODUCT.
HOURS: MON.-FRI. 10-6, SAT. 10-2
3441 GOLDEN GATE WAY, LAFAYETTE, CA 94549
(415) 283-1700
CALL BEFORE YOU BUY
Prices may change without notice. 90 day warranty on all products.
DISCOVER · MasterCard · VISA

PC Components Headquarters

YES-386 20 MHz

- 20/8 MHz Motherboard
- 1 MB RAM Expandable to 2MB/More
- 200 Watt Power Supply
- 1.2 MB Floppy Drive (Japan Made)
- 84 Key Keyboard
- Hi-Res Monographics/Printer Card
- 12″ Mono Amber Monitor (720x348)

$2288

16 MHz COMPLETE . . . . . .CALL

YES-286 10 MHz

- 10/6 MHz Motherboard
- 512K RAM Expandable to 1MB
- Hard/Floppy Controller
- 1.2 MB Floppy Drive (Japan Made)
- 84 Key Keyboard
- Hi-Res Monographics/Printer Card
- 12″ Mono Amber Monitor (720x348)

COMPLETE SYSTEM **$888**

12 MHz COMPLETE $999

TURBO 8088 -2

8/4.77 MHz Turbo Motherboard
256K RAM Expandable To 640K
150 Watt Power Supply
360K Floppy Controller
360K Floppy Drive (Japan Made)
84 Key Keyboard
Hi-Res Monographics/Printer Card
12″ Mono Amber Monitor (720x348)

COMPLETE SYSTEM **$468**

10/4.77 MHz SYSTEM .$488

Seagate HARD DISK (cash)

20 MB w/Contrlr	$249
30 MB w/Contlr	279
30 MB 4038	399
40 MB 251	375
40 MB 4053	499
80 MB 4096	599
OTHER MODELS	CALL

**Prices Good Thru July 9, 1988

DISK DRIVES

TEAC 360KB/1.2 MB	$75/90
FUJITSU 360KB/1.2MB	65/85
3½″ 720KB/1.44 MB	90/129
APPLE COMP. Disk Drives	IIe $90/IIc $99
OEM 360K	60

MONITORS

14″ Monitor (720x348)	$88
Amber-Green-Black & White	
15″ Dualscan Monitor	128
14″ Ultrascan/Multisync Monitor (800x560)	448
NEC Multisync II	588
NEC Multisync Plus	948
Tape Back-Up	LOWEST

ADD ON BOARDS

Monographics Card w/Printer Port	$45
Color Graphic Card w/Printer Port	40/45
Paradise EGA 350	168
ATI EGA Wonder	199
Paradise EGA 480	188
Everex EGA 350	128
Everex EGA 480	178
Genoa EGA (800x600)	188
720/360K Floppy Controller Card	18
Multi I/O Card	48
Printer Card	20
RS-232	20
Clock Card	25
Game Card	20
1.2 MB Floppy Controller	48
286 I/O Card	55
8088 2nd Serial Kit	15
286 W.D. Floppy/Hard Controller	125
286 2nd Serial Kit	25
2MB EMS RAM Card (8088/286)	75/85
1200 Internal Modem	68
2400 Internal Modem	128

SERVICE

- 8088/286 & ALL MODELS
- Hardware Installation & Troubleshooting
- Software SetUp & Training
- Available For Emergencies With Appointment
- Reasonable rates

MISC.

Gender Changer (25-25; 9-9)	$5
Printer Cable 6′/9′/15′	6/9/15
6′ RS-232 (MF,F-F, M-M) Cable	9
Monitor Extension Cable	9
Keyboard Extension Cable	9
Hard/Floppy Disk Cable	6
8088 Case	27
8088 Case 286 Lookalike	35
286 Case	45
286 Slide-In Case	54
Diskette Box (cap 100 pcs)	8
Data Switch Box (AB:ABC:ABCD)	20/24/29
Dot Matrix Printer	165
Power Station (with surge)	29
Surge Protector (UL Approved)	10
150W/180W/200W Power Supply	45/60/75
84 Key Keyboard	55
101 Enhanced Keyboard	55
Mouse Pad	9
Printer Stand (80/132 Columns)	14/19
System Stand	14
Joystick	25

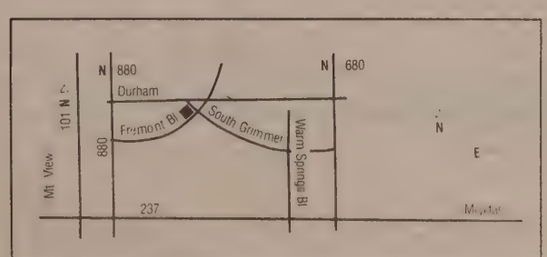
We Carry Too Many Items To List Fully
Call For Products Not Listed

Y.E.S. Multinational, Inc.

Dealer Inquiries Welcome

(415) 657-4888 •

44833 Fremont Blvd., Fremont, CA 94538 Mon-Fri 10:00-6:30 • Sat 10:00-5:00
FAX (415) 656-0118



Prices subject to change w/o notice Not responsible for typographic errors

SR Computer Center. (707) 523-1035, 300/1200.

Sonoma County Atari Group. (707) 539-8889, 300/1200.

Sharp Resolutions. (707) 539-7462, 300/1200, DMG network.

Sherlock Enterprises. (707) 578-0385, 300/1200/2400.

Smurf's Village. (707) 664-3399, 300/1200. Closed from 3:00 PM to 10 PM.

Sonoma Computer. (707) 938-3805, 300/1200/2400.

Sonoma Users Group. (707) 996-7922, 300 baud.

Star Trek. (707) 792-2492, 300/1200.

Tarot. (707) 833-1805, 300/1200.

Tavern. (707) 584-3980, 300 baud.

Time Arts. (707) 576-7352, 300/1200.

The Other Woman. (707) 938-3508, 300/1200/2400.

Vis-a-Vis. (707) 575-5774, 300/1200/2400.

714

Adventurer's Castle. (714) 871-4119. 300/1200 24 hrs. Real time gaming. Sysop: William E. Hart

Amiga Friends. (714) 870-4754. 300/1200/2400 24 hrs. Run by one of S. California's largest Amiga clubs. Special interest sections, downloads, club activity information. Sysop: Scott Thayer

Bits & Pieces Time BPT-Main. (714) 630-8897. 300/1200/2400 24 hrs. No parity, full duplex. BBS determines baud rate by ret. key. Large software library for Commodore 64/128, Amiga & IBM. Sysop: Mike Dalton

Dial-Your-Match. (714) 825-0901. Colton.

Dial-Your-Match. (714) 773-5326. Fullerton.

Dial-Your-Match. (714) 682-8763. Riverside.

Dial-Your-Match. (714) 739-8822. Buena Park.

Dial-Your-Match. (714) 751-4860. Santa Ana.

Dial-Your-Match. (714) 857-2470. Irvine.

French Connection. (714) 858-8111. 300/1200/2400/9600. 16 multi-line BBS in Orange County. Dating service; 500 megs of software for users. Sysop: Stephen M. Cohen

Fretwork. (714) 974-7428. 300/1200 24 hrs. Punter protocol for file transfers. Commodore specific. C-TUG members's night - every Fri. Sysop: Jeff Griffith

Happy Trails. (714) 547-0719. 1200/2400 8-N-1 24 hrs. MS-DOS; Multi-user; E-mail; Downloads; SIG's; On line games Sysop: Don Inglehart

Imperial Palace of DB. (714) 860-0889. 1200 24 hrs. Commodore 64, 128.

Nebula 6. (714) 595-6577. 300/1200/2400 8-N-1 24 hrs. Write for a free newsletter. P.O. Box 1071, Walnut, CA 91788. PC-Pursuitable. Sysop: Michael Quirino

Network XXIII. (714) 548-4836. 1200/2400/9600 8-N-1 24 hrs. On-Line registration; 1500+ files; conferences; online games. Sysop: Jim Brandon

PC Exchange. (714) 956-5468. 2400/4200 24 hrs.

PC Exchange. (714) 956-5468. 1200/2400/9600.

PC-LAIR. (714) 839-9580. 300/1200/2400 8-N-1 24 hrs. PC-DOS; MS-DOS. Large PD software library. Sysop: Eric Drochner

Software Exchange. (714) 552-3515. 300/1200/2400 8-N-1 24 hrs. For IBM & compatibles. Over 3000 programs in 152 megs. Fastest-growing BBS in Southern California! Sysop: John Coon

The Byte Zone. (714) 491-7635. 300/1200 24 hrs. Serves all Tandy computers & many others, incl. MS-DOS. Features adventure help files, elect. mail,message bases, etc. Sysop: Franco Collino

The End of the Line. (714) 645-6581. 300/1200/2400 8-N-1 24 hrs. Running Wildcat BBS software. Pub. dom.& shareware for IBM & compatibles. Private/pub. message bases. Scorecast data files. Sysop: Bob Kelly

TripWire TECHnologies (PCB). (714) 964-1146. 1200/2400 24 hrs. Multilingual operations with 7 national echomail areas. (Beta testing PCBmail) Sysop: William Kidd

Wellspring RBBS. (714) 856-7996. 300/2400 M-F 5 PM-8 AM. S-S 24 hrs. Medical/AIDS/Software.

Calsonic. (714) 830-5958. Password=CII. Use real names. Sysop: Kerry Williams

Toshiba BBS. (714) 837-4408. 1200 8-N-1 24 Hrs. Toshiba laptop support.

PC-LAIR. (714) 839-9580. 300/1200/2400 8-N-1 24 hrs. PC/DOS, MS/DOS. Large PD Software Library. Eric Drochner.

717

Dead Board. (717) 677-9573. Sysop: Captain Trips

800

APPLESIG on the Source. (800) 336-3366, 300/1200/2400. International Apple users group with over 700 programs. Fee. Free membership and $60 credit before June 30.

PC Pursuit. (800) 835-3001, 300/1200/2400. Registration required.

805

Success BBS. (805) 238-7359. 300/1200 24 hrs. Sysop: Larry Sarver

The Digital Dungeon. (805) 683-2436. 300/1200/2400 8-N-1 24 hrs. Open System designed to be an open forum. Primarily a conversation system. Sysops: Jerry Ash, Doug Sander

818

The Bear's Lair. (818) 988-6694, 300/1200/2400, 24 hrs. Macintosh oriented, 200Mb on line, multiple message sections. Sysop: Bruce Gerson.

Fox Hole. (818) 332-3073. 300/1200 24 hrs. Home of Pervert's Palace. On-line games etc. Write for info: P.O. Box 1071, Walnut, CA 91788. Sysop: Dr. Foxe, Ultamacy

Dial-Your-Match. (818) 888-6688. Canoga Park.

Dial-Your-Match. (818) 845-5325. Burbank.

Dial-Your-Match. (818) 247-6343. Glendale.

Dial-Your-Match. (818) 954-0790. Burbank.

Dial-Your-Match. (818) 506-6300. N. Hollywood.

DELOS. (818) 242-2365. 300/1200 24 hrs. Lo-cost access or free ltd. use. Serving the Gay Community. 10 lines for chatting! Library & many public boards.

DELOS. (818) 242-1410. 2400 24 hrs. Lo-cost access or free ltd. use. Serving the Gay Community. 10 lines for chatting! Library & many public boards.

Dial-Your-Match #1. (818) 842-6900. 300/1200. 24 hrs. The original dating BBS on-line since 1981. Fill out a personalized questionnaire & join the fun!

Fantasy Plaza. (818) 840-8066. Burbank.

Hard Ball PC Board. (818) 713-0420. 1200/2400 8-N-1 24 hrs. Programming conference specializing in Pascal. Huge P/D & Shareware Filebase for PC & compatibles.

LEGACY - The Law Network. (818) 990-7600. 1200 8-N-1 24 hrs. Info on Computer Law, Entertain-

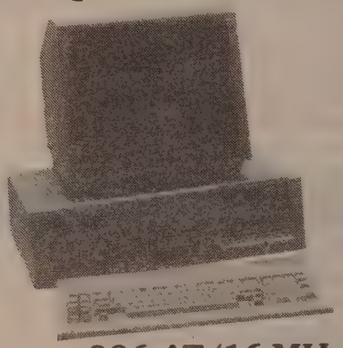
GRAND OPENING SALES

BEST PRICE — BEST QUALITY — EXCELLENT SERVICE

XT-Turbo System

- Turbo Motherboard (4.77 8MHz/10MHz)
- 256K RAM Expandable to 640K
- 360K Floppy Drive
- Monographic Card
- Monochrome Monitor

Price: $495



286-AT System

- 80286 Motherboard (10 MHz - 0 Wait)
- 512K RAM Expandable to 1 MB
- 1.2 MB Floppy Drive
- Dual Floppy/Hard Disk Drive Controller
- Power Supply - 200 Watt
- AT-Style Keyboard

Price: $899

Extra Floppy Drive (360K): $70
20 MB Hard Disk w. Controller: $260

386-AT (16 MHz) System

- 80386 Motherboard - 16 MHz
- 1 MB RAM Expandable to 2 MB
- 1.2 MB Floppy Drive
- Dual Floppy/Hard Disk Drive Controller
- Power Supply - 200 Watt
- AT-Style Keyboard
- Parallel & Serial Ports

Price: $2119

Options:

ST-225 20 MB Hard Disk: $225
ST 238 30 MB Hard disk w/Controller: $[illegible]
ST-251 40 MB Hard Disk: $389
ST-4051 40 MB Hard Disk: $569
ST-4096 80 MB Hard Disk: $839
Monitor (with Monographic Card): $119
Color Monitor (with Colorgraphic Card): $269
EGA Monitor (with EGA Card): $46[illegible]

NEAT 286-AT (16 MHz) System
- NEAT 80286 Motherboard - 16 MHz
- Same Configurations as 286-AT System

Price: $1095

NEAT 286-AT (20 MHz) System
- NEAT 80286 Motherboard - 20 MHz
- Same Configurations as 286 AT System

Price: $1145

FAX MACHINES — PANASONIC • SHARP • RICOH • (All Models)
CALL FOR BEST PRICE

Santa Clara:
500 Laurelwood Rd. Unit 5
Santa Clara, CA 95054
Tel. 408-988-6192 Fax. 408-988-0435

ARK TECHNOLOGY CORPORATION

San Francisco:
1740 Market Street
San Francisco, CA 94102
Tel. 415-431-2807

TopNotch TransComputer

High-Performance & Super-Fast 286/386 Computer Specialist...

When it comes to cost & performance, Nothing even comes close !!!

TopNotch 286 with 21MHz SI !

(Designed for OS/2 with built-in EMS: Faster than 386-16)

$1250.00

16-bit 16MHz 80286-16
Interleaved zero-wait state memory access
Designed with Chips&Tech's NEAT chipset
Built-in EMS 4.0 capability
512KB Memory expandable to 8MB on-board
Re-programmable CPU and I/O bus speed
Landmark SI = 21.4 MHz, Norton SI = 18.9
Socket for optional 80287(any speed)
Certified AMI BIOS
Dual hard/floppy disk controller
1.2MB floppy disk drive
Enhanced workstation keyboard
Complete system utility programs
Detailed technical reference manual

SYSTEM	LANDMARK SI	NORTON SI
TransComputer 286-16	21	18.9
COMPAQ 386-16	20	18.7
WYSE 386-16	20.6	15.3
IBM MODEL 80	20	15.3
COMPAQ 286-12	11.7	10.3
IBM AT 286-8	8	7
AST 286-10	13	11.5

286-12: 16MHz SI $995

16-bit 12MHz 80286-12
Zero-wait state memory access
Landmark SI = 16.1MHz, Norton SI = 15.3
Certified Phoenix BIOS
512K Memory expandable to 640K or 1MB
Full size motherboard with 8 I/O slots
Dual hard/floppy disk controller
1.2MB floppy disk drive
Enhanced workstation keyboard
Complete user's manual & documentation
Complete with utility software
Packaged in a protective shipping box

286-10: 13.2MHz SI $890

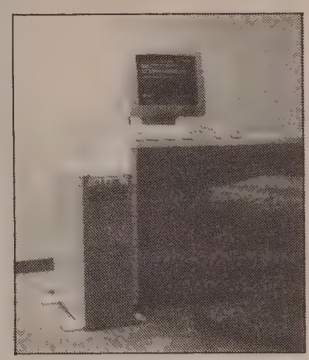
TopNotch 386 with 25.5MHz SI !

(Same price as 16MHz with higher performance !)

$1990.00

(Add $290 for tower case as shown)

32-bit 20MHz 80386-16/20 CPU with 3.5MIPS
Interleaved zero-wait Static column RAM access
1MB expandable to 32-bit 10MB (80ns)
On-board non-volatile CMOS RAM
COMPAQ compatible motherboard
Norton SI = 23, Landmark SI = 25.5MHz
Software switch able to 8, 10, and 20 Mhz
Socket for optional 80387-20
Certified Phoenix 386 BIOS
1.2MB floppy disk drive w/ controller
Enhanced workstation keyboard
Technical reference manual
Motherboard MADE IN U.S.A.



Hard Disk Options:

20MB: $249
30MB (RLL): $289
42MB : $399
65MB (RLL): $550
80MB: $750
147MB (ESDI, 23ms): $1825
320MB (ESDI, 18ms): $3700

Monitor Options:

12" Amber Monitor w/ MGP ... $120
14" Hires amber w/ MGP ... $155
14" EGA monitor w/ EGA card ... $525
14" HiRes NANOA VGA Multi-Sync ... $550

Trans-Networking CAD/CAE Desktop Publishing

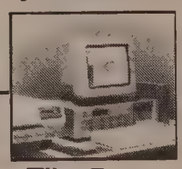
COMPLETE NETWORK SOLUTION

CSMA/CD Controller

* Simple to interface
* Easy to install
* User friendly
* Very fast
* & Low Cost !

1Mega Bit Per Sec. Twisted Pair Network

CSMA/CD Controller

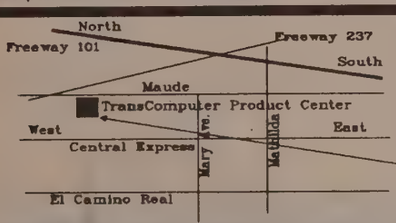


File Server

Starter KIT: $650.00

Two CSMA/CD cards with complete user's manual
Net-BIOS/Utility Programs
File Server Software
Twisted-pair cable with terminator box

Proven Software: as good as IBM PC-LAN



Show-room hours
9:00 am - 6:00 pm: mon - fri.
or, by appointment

1024 W. Maude, Bldg. 201
Sunnyvale, CA 94086

TopNotch 386 CAE Workstation Only $3995 ! ($155/month*)

① TopNotch 386
- 1MB zero-wait static column memory
- 1:1 interleave hard disk access controller (3 times faster access than 1:3 interleave)
- 42MB fast hard disk drive
- 2 serial & 1 parallel port
- Math coprocessor (80387-20)
- 1.2MB floppy disk drive

+

② HiRES VGA Multi-Sync
- 14" Multi-sync VGA NANOA monitor
- 800x600 HiRES-VGA controller
- Analog VGA adapter cable

NOW 80387-20 included !!!
Retail Value at $790 !

Desktop Publishing QUAD-Package Offer !

[1] 1.5MB CrystalJET Printer
- HP LaserJET Interface with 300X300 DPI
- NEW Liquid Crystal Technology (fewer replacement parts than Laser)
- Three resident fonts with 7 optional fonts
- 33% faster print out than HP LaserJet II.

+

[2] Super 286-16 Computer
- 21MHz of system throughput
- 1MB 80ns SIP memory module
- 42MB fast hard disk drive
- Optical Mouse

+

[3] WYSIWYG Monitor
- What-You-See-Is-What-You-Get
- 15" 1280X800 HiRes monitor with controller

+

[4] Ventura or Page Maker
- Choice of Ventura or Page Maker Software

Only $189/mo (or $4995*) !

Trans Leasing
Available for low monthly payments !
Apply NOW...

TransComputer Direct Marketing Group: (408) 245-9606
FAX: (408) 245-4104

Solving Technology with Excellence...

Tech Support Hot Line: (408) 245-9603
1 year parts & labor warranty on all TransComputer products.
*Based on 36months closed-end lease with 10% buy out.

Corporate purchasing: FREE 30 days on-site maintenance service & net terms to qualified accounts

OEMs & Dealers: Ask us about our customized manufacturing service !

Pricing and system configurations are subject to availability (above pricing is based on cash & carry price)

7/7 - 8/8/88

ment Law, Comms. Law. Pro bono conference for free legal advice to non-lawyers. Sysop: Richard H. Kohn, Esq.

Lynzie's Motherboard. (818) 508-6482. 300/1200/2400 8-N-1 24 hrs. Multi-interest. Social events for users. If you're looking for a discriminating BBS, this is the place to be. Sysop: Lynzie Flynn

Mysteria. (818) 353-8891. 300/1200/2400. Occult & general text files, CP/M, turbo Pascal. Sysop: Phil Hansford

Oracle. (818) 509-9681. 300/1200/2400 8-N-1 24 hrs. 9 phone lines. System password MICROTIMES for higher access. Free demo version of Oracomm BBS software. Sysop: Gary Young

Party Line. (818) 842-3322. 300/1200 24 hrs. 11 phones. The most exciting multi-user chat system in Cal.! Also, integrated matching system, up-download, chat link sys.

The Board with No Name. (818) 785-3340. 300/1200. A gay-oriented BBS. No hourly fees; no time limit w/ paid access. 16 lines.

The Board with No Name. (818) 785-6428. 2400. A gay-oriented BBS. No hourly fees; no time limit w/ paid access. 9 lines.

The Ledge PC Board. (818) 352-3620. 300/1200/2400/9600. All systems welcome, full support for IBM PC/AT compatibles.

The Software Bank. (818) 993-5516. 300 to 9600. Atari ST only. 65 megs. Node #95 of FNET. Exchg. messages & files w/users on other FNET BBS nationwide thru our network. Sysop: The Software Bank

Dial-Your-Match. (818) 785-3498. Van Nuys.

Party & Chat Line. (818) 842-3322. Burbank.

Lynzie's Motherboard. (818) 989-3875. 300/1200/2400/9600 8-N-1 24 hrs. Matching, group and private chat system, local social events.S.F.V. Sysop: Lynzie Flynn

Fantasy Plaza. (818) 840-8066. 300/1200. Online adventure game.

Plaza Party Line. (818) 842-3322. 300/1200. Chat with 11 other callers. No hourly charges. Adult sections. Lots of women callers. Online since 1983.

Valley On-line Shopping Network. (818) 772-4227. 300/1200 (soon to be 2400). Provides local businesses the opportunity of selling their products on-line to local and national computer consumers. Sysop: BRAINS.

916

Dial-Your-Match. (916) 275-1265. Redding.

Dial-Your-Match. (916) 736-0739. Sacramento.

24th Street Exchange. (916) 451-7179. 300/1200/2400 8-N-1 24 hrs. Opus-based system. Free access. Lge. selection pub. domain files for IBM & compatibles. Special interest areas. Sysop: Don Kuhwarth/Laura Stua

Valley On-line Shopping Network. (818) 772-4227. 300/1200 (soon to be 2400). Provides local businesses the opportunity of selling their products on-line to local and national computer consumers. Sysop: BRAINS.

Phoenix Landing BBS. (916) 966-8243. 300/1200/2400. Macintosh oriented but many other computers are supported. File areas for Mac and other computers. Supports echomail conferences including ECHOMAC and BAYMAC.

Hackney's Hideout BBS. (916) 961-1042. 1200/2400 8-N-1. Includes AT&T users conference. Sysop: Rich Hackney.

Night-line Network Central. (916) 331-5043, 300/1200, 8:00 PM to 8:00 AM daily. Forum for individuals, clubs and organizations that want to network nationally with others. Sysop: Eric Thomas.

SEND YOUR BBS LISTING TO: USER GROUPS, MICROTIMES 5951 CANNING , OAKLAND, CA 94609

ASSOCIATIONS

SF Robotics Society. Meetings: 2nd Mon. Homestead Savings, Community Hall, 5757 Geary (at 22nd), SF. Guest speaker, developers' roundtable.

North Bay Users Group (NBUG). Meetings: 2nd Thurs. 7:30-10 PM 201 Maine St., Vallejo, CA. Family Computer Club dedicated to all forms of computing. Determine market opportunities, group research projects. (415) 564-6669.

PC Publishers of San Francisco. Desktop Publishing. Ventura, PC Pagemaker & others. Call (415) 661-9270.

Silicon Valley Computer Society. Contact Kent Stafford (408) 286-2969. Or write to 2464 El Camino Real #190, Santa Clara, CA 95051.

MIDICRUZ Computer and Music Users. Meetings: 1st Thurs., 7:30 PM, 200 Seventh Ave., Suite 225, Santa Cruz, CA 95062. Contact Robert at (408) 476-8464.

Association for Women in Computing. Meetings: 1st Wednesday of each month, 6:30 PM, Stagecoach Restaurant, 44 Montgomery St., San Francisco. Call 655-3110 for information.

North Bay Users Group (NBUG). Meetings: 2nd Thurs., 7:30-10 PM, 201 Maine St., Vallejo, CA. Family Computer Club dedicated to all forms of computing.

Bay Area Desktop Publishing Users Group. Meetings: each Tues. 7 PM Spats Restaurant, 1974 Shattuck Ave., Berkeley, CA.

California Genealogical Society Computer Interest Group. Meetings: 2nd Sat.- odd months Genealogical Society Library, San Francisco.

Computer Associates UG. Meetings: 3rd Wed. Gateway Holiday Inn, San Francisco, CA.

Computers & Law Assoc. Meetings: McGeorge School of Law, 3200 Fifth Ave., Sacramento, CA 95817.

Entrepreneurial Support Group. CEO. Meetings: SASE, P.O. Box 2781, San Rafael, CA.

PC Publishers of San Francisco. Desktop Publishing. Ventura, PC Pagemaker & others. Call (415) 661-9270

Professional Association Of Secretarial Services (PASS). Meetings: 2nd Sat. Oakland. Group for self-employed word processors. Contact Nina Feldman (415) 655-4296.

The Society For Technical Communication. Meetings: 1st Wed. 7:00 PM Room #3, SMUD Facilities, corner of Elkhorn and Don Julio, Sacramento. Devoted to the advancement of the theory and practice of technical communication.

Software Entrepreneur's Forum (SEF). Meetings: 3rd Thurs. 1875 Embarcadero Rd., Palo Alto. Helps individual software developers and startup software companies. Call for complimentary newsletter. (415) 854-7219.

ProTel (Professionals In Telecommunications. Meetings: Monthly. A network organization bringing together people interested in the world of telecommu-

Tired of Slaying Software Dragons?

Maybe it's time you thought about writing a computer book!

If you are experienced in computer programming, can communicate well, have the desire to break out of the pack, and earn BIG $$$, there may be a "computer book" at *The Waite Group* for you to write. We want individuals who are motivated to write anything from a single chapter to an entire book. We pay royalties or fees to writers for:

C Papers	A collection of expert advice, inside tips, and hot topics, for C programmers.
PC-DOS Users	PC-DOS lives! And so does PC-DOS User's Guide. We need a professional DOS writer/editor.
BASIC Developers	BASIC is reborn. We need writers with experience with QuickBASIC, TurboBASIC, and MS-BASIC 6.0. Want a graphics oriented book.
HyperTalk Tricks	We are looking for contributors who know HyperTalk and have developed special techniques.

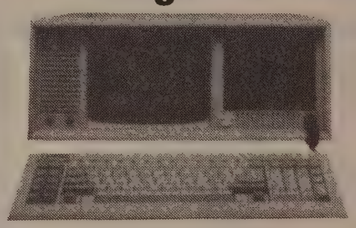
The Waite Group is a "think tank" for computer and technical books. We research, design, specify, review, edit, and produce computer books of high quality. Many of our more than 70 books are best sellers including: *CP/M Primer* (400K sold), *Assembly Language Primer for IBM PC* (200K), *C Primer Plus* (180K), *Tricks of the MS-DOS Masters*, and *MS-DOS Bible*.

Reply to Scott Calamar, Managing Editor. Ask for our *Author's Starter Kit*.
100 Shoreline Highway, Suite 285, Mill Valley, CA 94941 (415) 929-7088

The Waite Group
Books that joust the mind

ACC01608-1

Songtech International , Inc.



CRT-PORTABLE KIT $350

COMPUTER KIT

Desk-Top 80386 System	CALL
Desk-Top 80286 AT System	CALL
Desk-Top 8088 XT System	CALL
CRT Portable Kit for AT (9 inch monitor)	$380
CRT Portable Kit for XT (9 inch monitor)	$350
LCD Portable Kit for AT/XT (640x200)	$540
LCD Portable Kit for AT/XT (640x400)	$680

ADD ON CARDS

80386 Baby Motherboard (16MHz, 1MB,)	$1550
80386 Full-Size Motherboard (20MHz, 1MB,)	$1900
80286 Baby Motherboard (10MHz, 0 Wait,)	$300
80286 Full-Size Motherboard (I/O Ports,)	$350
80286 Accelerator Card for XT (EV-1250)	$245
8088 Turbo Motherboard (10MHz)	$85
80287-10 Math Coprocessor	$265
Enhanced Video Graphic Card (EV-673)	$245
Super Enhanced Graphic Card (Autoswitch)	$129
Monochrome Graphic Card	$42
RS-232 Serial Ports for XT	$22
RS-232 Serial Ports for AT	$30
MEMORY Expansion Card for XT (2MB, OK)	$75
MEMORY Expansion Card for AT (2MB, OK)	$80
EEMS Expansion Card for AT (2.5MB, OK)	$89
80286 AT Multi I/O Card (s/p/game)	$48
MULTI I/O Card for XT (FDC/s/p/game, clock)	$49
I/O Plus II Card for XT (s/p/game, clock)	$42
CLOCK Card	$22

LCD-PORTABLE KIT $540

DISK DRIVE, DISK CONTROLLER

TEAC Floppy Disk Drive (360K)	$72
TOSHIBA 3½ " Floppy Disk Drive (1.44MB)	$105
MICROSCIENCE Hard Disk Drive (20MB, 65Ms)	$225
SEAGATE Hard Disk Drive (30MB, 65Ms)	$235
SEAGATE Hard Disk Drive (40MB, 40Ms)	$340
WD WX1 Hard Disk Controller for XT	$65
HARD DISK/Floppy Disk Controller for AT	$115

COMPUTER PARTS

150W Power Supply	$45
180W Power Supply	$50
200W Power Supply	$75
230W Power Supply (UL approved)	$80
XT/AT Keyboard (83 keys)	$40
XT/AT Enhanced Keyboard (101 click keys)	$55
1200 BPS Internal Modem	$65
2400 BPS Internal Modem	$135
EPROM Programmer (EW-901)	$75
IC Tester 302 (w/dram test)	$130
LOGITECH Serial Mouse (C7)	$65
LOGITECH Bus Mouse	$65
LOGITECH Hi-Res Mouse	$92
LOGITECH Publisher Mouse (w/Publisher Software)	$105
LOGITECH PC Paintbrush Software	$20
LOGICADD Software	$39
PC Optical Mouse	$89
PRINTER Switch Box (AB or ABCD)	$20/$30
EPSON Printer (all models)	CALL

WE ALSO PROVIDE REPAIR SERVICE OF ALL KINDS OF POWER SUPPLY. CALL FOR MORE PRODUCTS AND PRICE LIST.

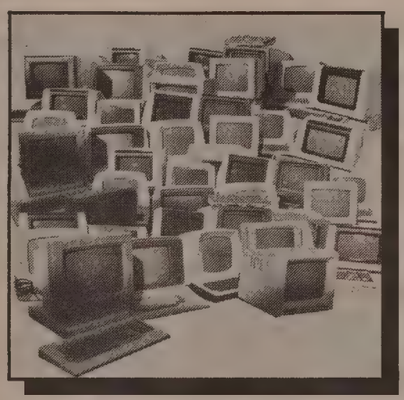
4588 Peralta Blvd., Suite 15
Fremont, CA 94536 • **415-794-9864** • **415-794-9867**

Computer Surplus Store

715 Sycamore Drive • Milpitas, CA 95035 • 408-434-0168 • FAX 408-434-0931

LIQUIDATION PRICES EVERYDAY

Visit the Largest Surplus Store in the Valley.



HUGE

Terminal and Monitor Sale "REFURBS"

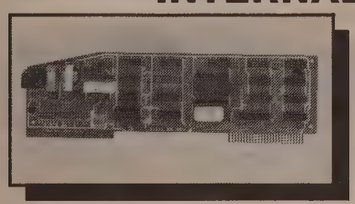
Quantity and Pricing Varies

TERMINALS

- Intercolor ANSI (Color) . . . $129
- Lear Siegler ADM 5 . . . . . $89
- Lear Siegler ADM 3,A $65
- TeleVideo 925 . . . . . $179
- Qume QVT108 . . . . . $189
- Qume QVT109 . . . . . $199

- Hard Disk Controllers
- Hard Disk Drives
- Floppy Disk Drives
- Mainframes
- Software
- Printers
- Power Supplies
- Terminals
- Monitors
- Hardware
- Magnetic Media
- Equipment
- Clone Boards
- Mechanical Gizmos
- Weird Stuff
- Thousands of Other Items

INTERNAL MODEMS



- Apple II, II+, Hayes Compatible
- Manual Included

$19.95

- IBM
- 300/1200/2400 Baud
- Software/Manual Inc.

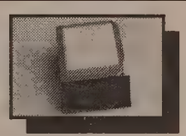
$109.95

PRINTER

ALPHACOM ALPHAPRO 101

$149

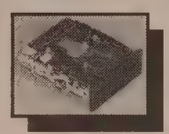
- Apple II, II+, IIe, or IBM Interface Included
- Excellent Letter Quality
- Diablo and QUME Print Wheel and Ribbon Comp.



HARD DISK DRIVES

- Maxtor 3280 **NEW** SCSI 280 MB, 26 ms Access, 6-mo. Warranty . . $1545
- Maxtor 3380 **NEW** SCSI 380 MB, 28 ms Access, 6-mo. Warranty . . $1995
- Maxtor 4380 **NEW** ESDI, 380 MB, 18 ms Access, 6-mo. Warranty . . $1995
- Maxtor 4380 **REFURB** with 45-day Warranty $1695
- Micropolis 1355 **NEW** ESDI, 170 MB, 36 ms Access, 45-day Warranty $1295

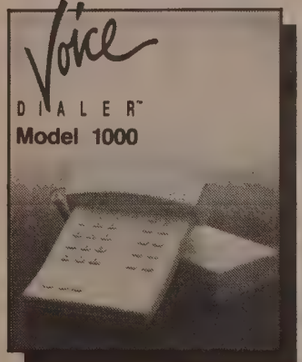
NEC FD1035 3½" Floppy Drive



For IBM and Others

- DSDD
- 360K or 720K
- No 5¼" Mounts

$69



VOICE DIALER $129

"Performed with impressive speed and accuracy." **Consumer Reports**

- Uses voice recognition and voice synthesis
- Understands any language or accent
- Memorizes 100 names and 200 numbers
- 'Looks Up' numbers from self-contained directory
- Provides spoken confirmation of the name called
- Dials long distance services automatically such as MCI and Sprint
- Times calls by the minute
- Uses tone or pulse dialing

Winner of 1986 Electronic design and engineering award!
As featured in Consumer Report, Vogue, Sharper Image, and Playboy.

Computer Surplus Store

Surplus Solutions

STORE HOURS
9:00–5:30
Monday–Saturday

715 Sycamore Drive
Milpitas, CA 95035
408-434-0168

We Will Beat Any Advertised Price!!

nications. Call (415) 227-5637.

Artificial Intellegence Special Interest Group. Meetings: 2nd Thurs. Engineering 101,Santa Clara University. Independent nationally recognized group studying and developing AI and artificial neural networks. Call Kent Byron (408) 244-8739 for info.

Bay Area Desktop Publishing User's Group. Meetings: Tues. 6-8 PM Norman's Restaurant, 3204 College Ave., Berkeley. (Corner of College and Alcatraz. For more info call Dr. C.J. Wallia at (415) 848-8200.

Business Computerization User Group. Group forming. Write 6938 Buckingham Blvd., Berkeley, CA 94705, or call (415) 848-2080.

Prolog Forum. Meetings: Monthly, 2nd Thursday 7:00 PM, Belmont and various locations. Prolog Forum is a group dedicated to supporting users of the Prolog computer language in artificial intelligence. Call Mark A. Epperson at (415) 594-9981.

ProTel. Next meeting: Wednesday, July 6, 6:30 PM Holiday Inn, 1221 Chess Drive, Foster City. ProTel is a network organization for people interested in telecommunications. "Intl. Voice Mail Systems" is July's topic. Leave a message at (415) 227-5637 for information.

SF Robotics Society. Meetings: 2nd Mon., Homestead Savings, Community Hall, 5757 Geary (at 22nd), SF. Guest speaker, developers' roundtable.

Silicon Valley Computer Society. Contact Kent Stafford, (408) 286-2969. Or write to 2464 El Camino Real #190, Santa Clara, CA 95051.

Valley of the Moon Users Group. Meetings: 2nd Saturdays monthly, 10:00 AM, Moose Lodge, Sonoma. All systems welcome. BBS, 300 BAUD, 24 hours, (707) 996-7922.

AI Expert Systems for Business (ESB). Meetings: 1st & 2nd Suns., San Francisco. Business PC expert system solutions. Determine market opportunities, group research projects.

Artificial Intelligence Special Interest Group (AISIG). Meeting: July 11, 7:30 PM, Hewlett Packard, 19447 Pruneridge, Cupertino. Topic: "Expert Systems! What Are They And What Can They Do For You!" Call Rita Zokaei, (415) 574-8225.

PC Publishers Of Northern California. Meetings: 2nd Thursdays, 7 PM, 1415 Valencia St., San Francisco Newsletter, telephone hotline, reference library, education. Support Ventura, PC PageMaker, etc. Intro membership: $15/yr.

Computer Associates Users Group. Meetings: 3rd Wednesdays, Gateway Holiday Inn, San Francisco. Call (415) 864-6770 for more information.

BAY HPX. Meetings: 2nd Saturday Laptop & handhelds. Call Jim Horn or Michael Felsenstein: (707) 794-3130/(415) 564-8279.

Nota Bene User Group. Meetings: 3rd Tues. or Thurs., 7:30 PM Berkeley or Peninsula. For location and date, call Thomas Ross, (415) 845-2410.

MORE: Modemusers Of The Redwood Empire. Meetings: Thurs. July 14; Fri. Aug. 9; 7 PM, Roundtable Pizza, Highway 12 @ Stony Pt. Free membership for modemers who want to get together and talk about local boards. Includes novices to techno-wizards. Call (707) 546-5203.

Association For Women In Computing. Meeting: Wednesday, July 6, 5:30 PM, Stagecoach Restaurant, 44 Montgomery St., SF. Topic: UNIX. Guests welcome. Call (415) 655-3110.

Network Users Group (NUG). Next meeting: July 7. Call for location and time. Panel discussion of workgroup software with several major software manufacturers represented. Call (415) 655-6500 for details.

USER GROUPS

AMIGA

Amiga Addicts Anonymous (AAA). Newsletter, public domain library, demonstrations.

ASCITEC: The Amiga Science & Technology Users Group. Meetings: 2nd Thurs. 5-7 PM Lockheed, B/157, Rm. 4-C, Sunnyvale, CA. Scientific/Video Applications. Classes available.

AUGment - Amiga Users Group of Silicon Valley. Meetings: 2nd Fri. Write to P.O. Box 1863, Fremont CA 94538 for more info.

Bay Area Amiga Developers Group (BADGE). Meetings: 3rd Thurs. 8 PM Turing Auditorium, Stanford University, Stanford, CA. For all Amiga programmers. No membership fee.

Northern California Amiga Club. Meetings: 2nd. Sat. 1:30 PM Business Incubator, 4311 Airport Rd., Redding, CA. $15/yr., monthly newsletter, access to PD disk library, SIG's & support.

SMAUG (Salinas-Monterey Amiga Users Group). Meetings: 3rd Tues. at 7 PM, Seaside Library, 550 Harcourt Ave., Seaside, CA. Write PO 776, Castroville, CA 95012 for call Richard Binsacca at (408) 678-2518.

ACCESS (The Amiga And Commodore Computer Enthusiasts Society). Meetings: 3rd Tues. 7:30 PM Community Room of Homestead Savings & Loan, 999 E. Stanley Blvd., Livermore, CA. Contact Ron Kremkow at (415) 449-1784.

Vallejo AMiga People (VAMP). Meetings: 2nd Tues. 6:30 PM Software 1st, Vallejo Corners Shopping Center. Contact Bill Braun at (707) 554-0263.

Amiga East Bay Info Exchange (AEBIE). Meetings: 2nd Tues. 7 to 9 PM 11185 San Pablo Ave., in El Cerrito. Write to P.O. Box 485, Pinole, CA 94564.

CWEST Bay Area Commodore User Group. Meetings: 3rd Thurs. Embarcadero YMCA, between Mission and Howard. Supports C-64/128, Amiga. Write P.O. Box 146731, San Francisco, CA 94114-6731.

SVAUG-Scotts Valley Amiga Users Group. Meetings: 2nd Thursday, 7:00 PM. The Computer Room, Kings Village, Scotts Valley.

AMSTRAD

North American Amstrad Users Group (NAAUG). National User group. For info send S.A.S.E. to NAAUG, P.O. Box 2178, Ferndale, WA 98240.

APL

APL Bay Area Users' Group. Meetings: 2nd Monday, 6:30 PM, I.P. Associates, 425 Sherman Ave., Suite 200, Palo Alto.

APPLE

Apple Pickers of the Redwood Empire. Meetings: 2nd Sat. 10 AM Santa Rosa JC, Shuhaw Hall, Rm. 1735. Call for sample newsletter. (707) 763-8322.

A.P.P.L.E. Co-op. Meetings: National User Group. Call-A.P.P.L.E. Magazine. Write: 290 S.W. 43rd Street, Renton, WA 98055.

FULL SERVICE AT DISCOUNT PRICES

DEMO FOR ALL SYSTEMS AND DESKTOP PUBLISHING

WYSE 386

40MB Hi-Res ZERO WAIT **$4095**

HIGH RES OPTION FOR CAD AND DESKTOP PUBLISHING
- Modular System Architecture
- 80386 CPU At 16MHz. 0 Wait State
- Dedicated 32 Bit Memory Bus
- WYSE 700 Monitor With Controller
- 1280x800 Pixel. Ideal For ACAD or Ventura
- 40mb 28ms Hard Drive

CIMPEX 386

- MYLEX Proven Motherboard
- Lightning Fast Architechture
- Choose From 16 MHz & 20 MHz CPU
- Memory Sizes From 1 To 10 Mb
- 64k SRAM No Wait State Cache
- Runs Unix, Xenix, Os/2
- Custom Fit To Your Applications
- Choose From Regular To Small Footprint
- Tower Case Also Available

CALL FOR DETAILS

ACER 1100

386 SYSTEM MONO 40MB **$3465**

- 80386 CPU at 16MHz. 0 Wait State
- RAM BIOS Allows I/O Optimization
- 40MB 28ms Hard Drive
- 14 Inch Monochrome Monitor

WYSE 2112

MONO 40 MB **$2395**

- Modular System Architecture
- 12/8 MHz 80286 CPU
- 1 MB Memory
- WYSE 530 Monitor
- 40MB Hard Drive

WYSE 2108

8 MHz CPU , 20 MB hard drv., mono sys. **$1745**

WYSE 2200

10/6 MHz CPU, 20 MB hard drv., mono sys. **$1895**

MICROTEK SCANNER

Model MSF300C Image Scanner **CALL**
- Flat Bed
- 64 Shades Of Gray
- 300 DPI

WYSE 2214

GENOA EGA TAXAN 770+ **$3395**

40 MB SUPER EGA SYSTEM
- 12.5MHz at Zero Wait State
- Genoa Super EGA (800x600)
- Taxan 770+ Multisync Monitor
- Seagate 40 MB dirve (28ms)
- MS DOS 3.21 With Enhanced Features
- 12 Months Factory Warranty

CIMPEX 286 (0 WAIT)

SUPER FAST 20MB MONO SYSTEM **$1495**
- 12MHz CPU at 0/1 Wait State
- 512K Fast DRAM
- 20 MB Hard Disk
- 1.2 MB Floppy Disk
- Mono Monitor w/MGA

!! SPECIAL !!

AST PREMIUM 286

$2395
- 10 MHz CPU at 0 Wait
- 40MB Hard Disk (28ms)
- 512K Expand to 1MB
- 1.2MB TEAC Floppy Dr.
- 14" Flat-screen White Monitor
- MGA with Printer Port
- Enhanced AT Keyboard

**** FREE ****
SURGE PROTECTOR WITH SYSTEM PURCHASE

PRINTERS

HP Laser Jet II With Toner	**1675**
Epson FX286e	LOW
Brother 1509/1709	$395/565
NEC P6/P7/P2200	489/635/369
NEC Laser Printer LC-890 PostScript	3299
Fujitsu All Models	call
Citizen All Models	call

CARDS

EVEREX EVGA (1280x600)	$275
PARADISE VGA Plus	285
VEGA VGA	295
Genoa Super EGA (800x600)	195
Paradise Autoswitch (750x350)	159
Everex EGA (648x480)	135
AT RAM Card (EMS) 2.5MB	99

MONITORS

Sony Multiscan	Call
NEC MultiSync II	595
NEC MultiSync Plus / XL (19")	945/2395
NEC MultiSync GS	235
Taxan Multisync 770+(800x600)	565
Casper Mono/EGA	89/399
Wyse 700 Hi-res (1280x800)	795

MODEMS

Everex 1200Int/2400Int	$89/169
Avatex 1200hc External	129
Telemidas with Bitcom 1200Int/2400Int	79/149
USRobotics 2400 Int/Ext	199/209

SOFTWARE

LASERTORQ (a Must For Laserjet User)	$99
Pagemaker	call
Ventura	call

This AD is done with Ventura Publisher. July 1988

Cimpex computers

1398 EL CAMINO
MOUNTAIN VIEW
(415) 964-5000

(Between Bailey & Rengstorff)

Prices subjected to change without notice

Going boldly where no laptop has gone before

The High-Powered Zenith Data Systems SupersPort 286 Laptop from your Heath/Zenith Computer Center

Venturing to a new frontier in laptop technology, the SupersPort combines desktop performance with laptop convenience.

SupersPort 286, SupersPort and TurbosPort 386 feature sizzling speed and extensive memory for even the hardest tasks. Both battery and AC operation to take your work wherever you go. With a unique power management system to let you prolong battery life. And MS-DOS® included, as well as the ability to run MS-OS/2.®

Plus dazzling displays from the Supertwist LCD to the NEW Page White™ CRT quality display for unsurpassed readability. All in an extremely portable laptop that weighs less than 13 lbs.

Designed to meet any need, Zenith SupersPort Laptops will help you soar to unheard-of heights.

20% OFF Any Laptop Purchase

(You must bring ad in to get discount)

Your premier computer and electronics chain since 1962. We'll come to you. Call us for a FREE Business Consultation.

Heath Zenith Computers & Electronics

Authorized dealer for Apple, Hewlett Packard, Epson, 3Com and Autodesk*Specialists in Desktop Publishing/Presentation, Desktop Engineering, Networking, and CAD.

MS-DOS and MS-OS/2 are registered trademarks of Microsoft Corp. Page White is a registered trademark of Zenith Data Systems.

2001 Middlefield Rd.
Redwood City
(415) 365-8155

2350 South Bascom Ave.
Campbell
(408) 377-8922

6000 Potrero Ave.
El Cerrito
(415) 236-8873

Or call (206) 251-5222 for more info.

Diablo Valley Apple Users. Meetings: 1st & 3rd Fri. 7 PM Willow Creek Ctr., 1026 Mohr Lane, Concord, CA. SIG's meet monthly. Featuring library of pub. domain software & club's DOM's. Newsletter, demos, group buys hard/ software.

San Leandro Apple Eaters Users Group, Apple II Users Group. Meetings: 1st Thurs. San Leandro High School, Rm. 213, San Leandro, CA New owners and experienced users welcome. AppleWorks (TAWUG), software & telecommunications SIG's meet monthly. Newsletter.

B.E.A.R. Apple II National Users Group. Meetings: send S.A.S.E. to B.E.A.R., 4719 Meridean Ave. #401,San Jose 95118. Printshop & Appleworks files, monthly newsletter.

Tri Valley Apple II Users Group. Meetings: 1st Thurs. 6:30 PM. Call Esther Farnstrom at (415) 829-3672 or Dan Balsey at (415) 828-6237 for meeting location.

ATARI

ABACUS - Atari Bay Area Computer Users Society. Meetings: 1st Sat. 19th Avenue Diner, 19th & Lincoln Aves., San Francisco, CA. Free meetings open to Atari XL/XE & ST users. With membership $15/yr, comes monthly newsletter, discounts on hardware, etc.

Bay Area Atari Users Group (BAAUG). Meetings: 1st Mon. 7:00 PM Bracher School, corner of Bowers and Chromite, Santa Clara. ST users meet at Bracher on 2nd Tuesdays. 8-bit users meet at H-P, Wolf and Pruneridge, Cupertino. BBS: (408) 247-1257.

AT&T

Bay Area AT&T PC Users Group. Meetings: 6:30 PM, on 1st Weds. at AT&T, 1000 Bdwy., Oakland City Center @11th; 2nd Weds. at AT&T,1090 E. Duane Ave., Sunnyvale.

Bay Area AT&T PC Users Group - South Bay. Meetings: 2nd Wed. 6:30 PM AT&T Bldg., 1090 E. Duane, Sunnyvale, CA. Call: Joe Lipsig (408) 733-6522. BBS: (408) 462-6329.

AUTOCAD

SF/Marin Autocad Users Group. Meetings: 1st Tues. $20/yr membership, newsletter or call Virginia: (415) 777-4025

Sonoma County Auto CAD Users Group. Call (415) 777-9144 for info.

COMMODORE

Campbell Chapter of 64/ More Commodore UG. Meetings: 4th Tues. BBS (408) 946-6154.

Commodore Connection Users Group. BBS (415) 458-1005.

Cupertino Chapter of 64/ More Commodore UG. Meetings: 3rd. Sat.BBS (408) 946-6154.

Fairfield Commodore User Group. Meetings: 1st & 3rd Mon. Solano County Education Bldg. Write to P.O. Box 2778, Fairfield, CA 94533-9998 for info.

F.U.N.H.U.G. - Fremont, Union City, Newark, Hayward User Group. Meetings: 3rd Thurs. 7:30 PM Newark Public Library, 6300 Civic Terrace Ave., Newark, CA. A user-organized, user-operated user group not affiliated with any computer or software manufacturer or distributer.

North Valley Chapter of 64/More Commodore UG. Meetings: 2nd. Sat. BBS (408) 946-6154.

PLUG (The Plus/4 Users Group). No regular meetings. Over 800 members internationally. Write to P.O. Box 1001, Monterey, CA 93942 for info.

San Jose Chapter of 64/ More Commodore UG. Meetings: 1st. Sun. BBS (408) 946-6154.

Silicon Valley Commodore Club. Meetings: 4th Wed. 7 PM Hewlett-Packard, 5301 Stevens Creek at Lawrence & 280. C-64, C-128, & Amiga.

Commodore 64 Software Users Group For New Commodore Owners. One-on-one help for new owners. Meeting place & time TBA by members. Call (714) 531-2977 for info.

ACCESS (The Amiga And Commodore Computer Enthusiasts Society). Meetings: 3rd Tues. 7:30 PM Community Room of Homestead Savings & Loan, 999 E. Stanley Blvd., Livermore, CA. Contact Ron Kremkow at (415) 449-1784.

CWEST Bay Area Commodore User Group. Meetings: 3rd Thurs. Embarcadero YMCA, between Mission and Howard. Supports C-64/128, Amiga. Write P.O. Box 146731, San Francisco, CA 94114-6731.

dBASE

dBASE Users Group of Marin & Northbay. Meetings: monthly, call (415) 488-0342 for info. Open membership, beginners through developers.

DATAEASE

Bay Area DataEase Users Group. Meetings alternate between San Francisco and Palo Alto. Contact Kermit Carter at (415) 945-7817 for info.

DYNABYTE

Dynabyte - Tahoe City Dynabyte Users Group. Swap, buy/sell - boards, parts, units. Write to Drawer 2629, Olympic Valley, CA 95730 for info.

EAGLE

Eagle Computer Users Group. Meetings: 2nd Sat. 9:30-12 noon Tandem Computer H.R. Training Rm., N. Tantau Ave., Cupertino.

EASYTRIEVE

Easytrieve Plus Users Group. Next meeting: June 14, Hyatt Oakland. Call Debbie at Pansophic, (415) 573-7100. All users welcome.

EPSON

Epson Users of San Francisco Bay Area. Meetings: 1st Thurs. 7-10 PM Fort Mason, Bldg. C, Rm. 216, San Francisco, CA. For users of Epson (QX, Equity, PX-8). Presentations, support network, newsletter, public domain software.

Epson Users Group of San Francisco, Inc. Meetings: 1st Thurs. 7 PM Fort Mason. Bldg. C, San Francisco, CA. PD-disks, newsletter, BBS, CPM, TPM, ValDocs, MS-DOS.

FIRST PUBLISHER

First Publisher User Group. Members make up 8 1/2 x11 formats for newsletters & tip sheets. $35 annual membership. Contact Raul Ibanez (415)550- 0785.

FORTH

Forth Interest Group of Silicon Valley. Meetings: 4th Sat. 1 PM Oak Room, at Hewlett Packard, on Pruneridge in Cupertino. Call George Shaw at (415) 276-5953 for info.

Forth Interest Group, North Bay Chapter. Meetings: 2nd Sat. 1 to 5 PM South Berkeley Community Library, corner of Russell and Martin Luther King Junior Way. One block north of Ashby BART station. Contact George Shaw (415) 276-5953.

FOXBASE+

FoxBase+ User Group. PO 20607 Oakland, CA 94620. New group now forming. Call Rachel Cohen, (415) 465-3570.

GAVILAN

Gavilan User Group.

Streets On A Disk

Business and Personal Mapping System

STREETS offers you much more than any ordinary map. By merely pointing with a mouse or cursor keys, you can use your computer to plan your next trip. **STREETS** will automatically display and print maps, travel directions, calculate distance, mileage, travel time, and fuel requirements.

With **STREETS**, you can display all of your business contacts on the map along with name, address, phone number or any text information.

Designed for use on a PC, AT, 386, and compatibles, **STREETS** is ideal for salesmen, dispatchers, travel agents, and motorists everywhere.

ONLY $99.95 (including a choice of city maps)

Add $5.00 shipping and handling. California residents add 6% tax.

Call (805) 583-1029

Klynas Engineering, Box 499, Simi Valley, CA 93062

The A·C·A·Demy

provides CAD services for beginning, intermediate and advanced CAD professionals. On-site training is provided for MS-DOS, AutoCAD, A/E/C, and AutoLISP, or you may choose scheduled classes in our Sausalito lab. For more information, call us at

The A·C·A·Demy

(415) 331-9466

FUJITSU

DX 2300/2400 and DL 3300/3400

DX 2300/2400

- 324 cps draft - 54 cps NLQ
- 80 column or 136 column
- Epson FX-80, IBM ProPrinter and IBM Graphics emulation
- Friction feed and adjustable tractor feed
- Quiet (less than 55dBA)
- Parallel and serial (optional) interface
- Color option available
- MTBF - 6000 power-on hours

Call for Price

DL 3300/3400

- 24-wire dot matrix
- 240 cps draft - 60 cps letter quality
- MTBF-8000 power-on hours
- IBM ProPrinter, IBM Graphics, Diablo 630 & Epson JX-80 emulation
- Parallel and serial (optional) interface
- Narrow or wide carriage
- Adjustable tractor and friction feed
- Head life 300 million strokes per wire

Call for Price

Cypress Distributing Company

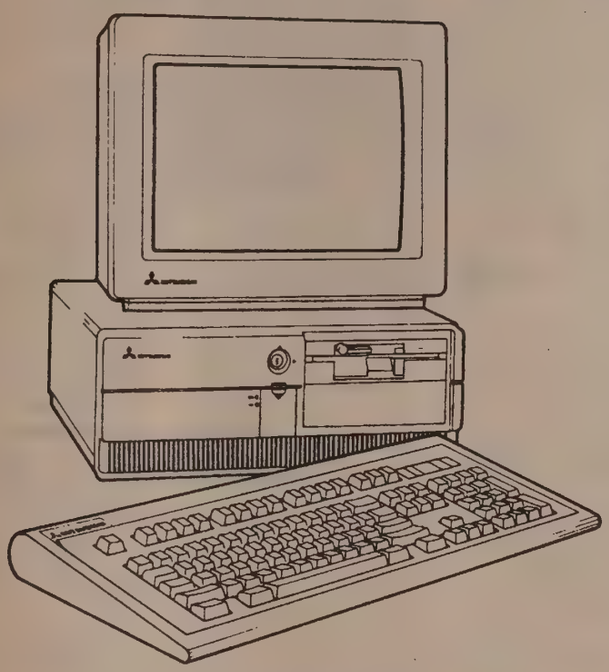
560 Lincoln Avenue
San Jose, CA 95126
(408) 297-9800

22186 Rim Pointe
El Torro, CA 92630
(714) 770-7244

2670 Truxel Road
Sacramento, CA 95833
(916) 646-1955

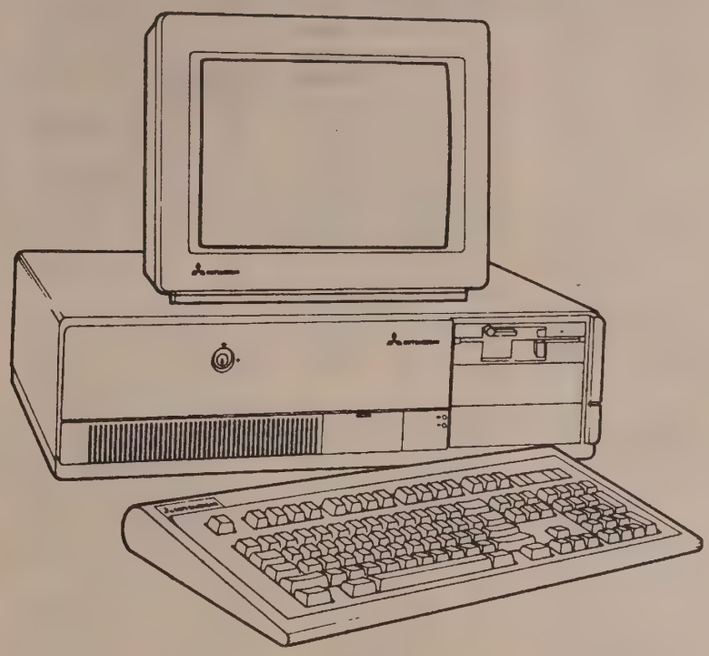
Quinax Emerson Century Data Systems Packard Bell Personal Computer Products Panasonic Seikosha C. Itoh Moniterm Star Micronics Mitsubishi Rutishauser Canon

Mitsubishi Computers



MP 286

12MHz 286 system, performance and power in a small (15" x 15") package with Mitsubishi quality!



MP 386

16MHz 386 0 Wait states, high performance, 10 slots, up to 10MB RAM, up to 5 half height drives

New Product

mp286L

New high powered 12MHz 286 laptop computer from Mitsubishi. 1.44MB Floppy drive, 20MB Hard disk, up to 2.6MB RAM, 4 slots for expansion, brightest LCD display available on any laptop!

Now, the entire line of Mitsubishi computers, along with floppy and hard disk drives, color monitors and many other exciting products are available from TASK. Call for dealer pricing and information.

MITSUBISHI ELECTRONICS

Authorized Distrubutor

Dealers - Call for a complete list of products!

TASK TECHNOLOGY, INC.

244 Sobrante Way Sunnyvale, CA 94086

(408) 773-0600

(800) 992-TASK

Meetings: 2nd Thurs. 7 PM Lockheed Bldg. 162. Cal (408) 379-2774 for info.

IBM AND COMPATIBLES

AI - Expert Systems for Business (ESB). Investigate real business Expert System solutions for PC's. Guest speakers, discussions. Newsletter. $18/yr, $26/yr bus. Call 564-6669 for info.

Diablo Valley CUG. Meetings: 2nd Thurs. 7:30 1331 Concord Ave. For info write: Box 27155, Concord, CA 94527. Or call (415) 932-2413.

IBM Compatible Users Group. Meetings: monthly, call (415) 969-6916 for info 7-10 PM.

IBM & Compatibles Users Group - Ontario Area. Meetings: Call 982-1270 for Info.

Marin-Sonoma PC Users Group (MSPCUG). IBM PC software & talk, business application oriented, official electronic voice of one of most influential groups. Call (415) 927-1216.

Sacramento PC User Group. Meetings: For information call Jackie Janssen at (916) 383-6900.

San Francisco PC Users Group. Monthly meetings, "Blue Notes" magazine BBS (415) 621-2609.

SF PC Jr. Users Group. Meetings: monthly. Lectures & discussions on usage of software & hardware. Software & book library. For more Info, send SASE to 2336 Market St., Suite 20, San Francisco, CA 94114.

Silicon Valley Computer Society. Meetings: 4th Wed. 7:30 PM Oak Room, at Hewlett Packard, on Pruneridge in Cupertino. Call Kent Stafford for info at (408) 286-2969.

Silicon Valley FOG. Meetings: 3rd. Wed. 7:30 PM Saratoga Community Library, 13650 Saratoga Ave.

South Bay AT&T PC UG. Meetings: Call for info. Call (408) 226-0116

South Bay Users Group. Meetings: 2nd Tues. 7:15 Saratoga Library, 13650 Saratoga Ave., STG.

South Bay WordPefect User Group. Meetings: 2nd Thurs. 7 PM Centennial Hall Conven. Ctr., 22292 Foothill Blvd., Hayward, CA. We offer public domain disks, speakers, newsletter.

Valley Computer Club IBM PC Users Group. Meetings: 3rd Wed. 6 PM Xerox Bldg. 475 Oakmead Pky, Sunnyvale, CA. $24/yr member. Monthly VPUG News, access rights to VPUG-SIG Advice on desktop pub. techniques, new products, bugs, etc.

Diablo Valley PC Users Group. Meetings: Walnut Creek, CA. Write: P.O. Box 8040, #117, Walnut Creek, CA 94596.

San Francisco PC Users Group. Meetings: 3rd Monday 8-10 PM, Rm. 1, Bldg. A, Fort Mason Center. Lectures, demos and software sales. New users welcome. Call (415) 221-9166 for recorded info.

San Francisco Computer Society. Meetings: 1st Mon. 7:00 PM. Homestead S&L, 5757 Geary Blvd., San Francisco. MS-DOS machines, Osborne, Kaypro, Morrow. Call Ralph Gallagher 929-0252.

CUE Club. MS-DOS machines. SIGs for other computers. BBS:(209) 239-9853. For more info call (209) 858-4401.

Silicon Valley Computer Society. Meetings: 4th Wednesday, 7:30 PM, Hewlett Packard Bldg. 48 (Oak Room), Cupertino Site. Dedicated to providing education, information and assistance to anyone with an interest in computers. BBS and many SIGS.

Sacramento PC Users Group. Meeting: July 20, 7 PM, Holiday-Inn-Holidome, Sacramento. Fifth largest PC users group in country; 2500 members. Phillipe Khan of Borland will speak at July meeting.

TRS Nybblers. Meetings: 2nd Friday, 8 PM, Chabot College, 2555 Hesperian Blvd., Rm. 600, Hayward. MS/DOS, CP/M, laptops, CoCo's, Mod 1, 3, 4; Mod 2, 12, 16, 6000. PD software education modules, problem solving committee.

Solano Community PC Users Group. Meetings: 3rd Monday, 7 PM, Fairfield High School.

PC Unix SIG. Meetings: 2nd Monday, 7-9 PM, AT&T Training Center, 1090 E. Duane Ave., Sunnyvale. Talks by UNIX experts, different UNIX versions discussed, library of PD source code.

Mid-Peninsula IBM-Club. For IBM employees only. Call Scott Maiden for info: (415) 855-4509.

East Bay Fog. Meetings: Monthly meetings, Apostleship of the Sea, 600 Terminal St., Oakland. Newsletter, BBS. Call (415) 272-9099 for info.

Solomon User Group Of Silicon Valley. Meetings: Wednesday, August 10, 6:30 PM, Conveyor And Storage Dynamics, 2581 Leghorn St., Mt. View. Call Grihalva Associates, 39899 Balentine Dr., Suite 175, Newark, CA 94560; (415) 659-1515.

KAYPRO

San Francisco Computer Society. Meetings: 1st Monday, 7:00 PM, Homestead S&L, 5757 Geary Blvd., San Francisco CP\M and DOS machines. No BBS. Call Ralph Gallagher, (415) 929-0252 for information.

MACINTOSH

TI-West Meetings: 2nd Fri. 8 PM Chabot College, Rm. 600, 25555 Hesperian Blvd., Hayward, CA. Access to a variety of pub. domain software, education modules "problem solving" peripheral committee.

Berkeley Macintosh User Group (BMUG). Meetings: every Thurs. 6 PM Physical Sciences Lecture Hall, UC Berkeley Campus. SIG meetings on Mondays, Tuesdays & Wednesdays. Call for this week's topic. (415) 849-9114. BMUG, 1442A Walnut St., #62, Berkeley, CA 94709.

Diablo Valley Apple Users. Meetings: 1st & 3rd Fri. 7 PM Willow Creek Ctr., 1026 Mohr Lane, Concord, CA. SIG's meet monthly. Featuring library of pub. domain software & club's DOM's. Newsletter, demos, group buys hard/software.

MacCruisers — Santa Cruz. Meetings: 2nd Wed. Jade Street Community Ctr. at 45th Ave., Capitola, CA.

MacNexus — Sacramento's Macintosh Users Group. Meetings: 3rd Thurs. 6:30 PM Call (916) 446-2411 for info. 350 members, but still informal. Extensive public domain collection.

Tri-Valley Macintosh Users Group (TMUG). Meetings: 4th Wed. 7 PM 4637 Chabot Dr., Rm. 107, Hacienda Business Park, Pleasanton. Newsletter, large P/D library. Contact Mike, (415) 838-6165.

Christian Macintosh User Group, Silicon Valley Chapter. Meetings: 1st Thurs. San Jose. Newsletter and support available. Contact Rick Thrasher at (408) 437-1913.

Christian Macintosh User Group, San Francisco Chapter. Meetings: 2nd Thurs. San Francisco. Newsletter and support available. Contact Rick Thrasher at (408) 437-1913. Bible Study and DTP SIGS.

East Bay Macintosh Us-

LINOTRONIC

OUTPUT AND SERVICE TOO!

CALL 654-5404

The Typesetting Shop has been providing service to type buyers since 1975. With the introduction of desktop publishing, we continue our commitment to providing quality and service to our existing and new clients. The entire current Adobe® typeface library is available to provide the broadest range of styles available on a 1270 dpi output device.

We also provide quality digital typography with over 300 typefaces, camera services, and disk conversion with over 500 different formats for computer users and typesetters.

The Typesetting Shop, Inc.

5236 Claremont Avenue • Oakland, California 94618 • (415) 654-5404

SATURDAY, AUGUST 20

COMPUTER BARGAIN SHOW

BAY AREA Computer Swap

EVERY ITEM ON DISPLAY IS AVAILABLE FOR IMMEDIATE PURCHASE AT BARGAIN PRICES

COW PALACE

SAN FRANCISCO

DIRECTIONS: From 101 or 280 take the Cow Palace Exit. Follow the signs to the Cow Palace, located at the corner of Geneva & Santos.

Admission $5 Children Under 12 FREE Sat. 10 a.m. - 5 p.m.

For Info. Call 415-340-9113

A MICROSHOWS PRODUCTION

A VISIT FOR THE PRICE OF A CALL

Only $375

MITSUBISHI®
VISUAL TELEPHONE DISPLAY

VISUAL TELEPHONE DISPLAY

- Compact 7½", 7½" x 8" Visual Telephone Display Unit
- Works With Any Phone
- Easy To Install
- 5" Black & White CRT Display
- View/Pose Button, To Let You Preview Your Picture Before Sending It, or To Review Last Three Received Images
- "Send" Button, To Send Your Picture

SYSTEM CONFIGURATIONS	386 SYSTEM $1950	286 SYSTEM $799	TURBO XT SYSTEM $399
Speed	16/8Mhz	10/6Mhz, 0 Wait State	8/4.77Mhz
Memory on Board	1MB Expandable to 8MB	512K Expandable to 1MB	256K Expandable to 640K
Disk Controller	Hard & Floppy Controller	1.2MB/720K/360K Controller	360K Floppy Controller
Drive	1.2MB Floppy Drive	1.2MB Floppy Drive	360K Floppy Drive
Power Supply	200 Watt	200 Watt	150 Watt
Co-processor Socket	80387/80287	80287	8087
Keyboard	Enhanced Style	AT Style	AT Style
Expansion Slots	8	8	8
Real Time Clock	Built-in	Built-in	Option
LED Lights	Power, Hard Disk, Turbo	Power, Hard Disk, Turbo	Option
Drive Opening	3	3	4
Video Card	Option	Color or Monographic	Color or Monographic
Warranty	1 Year	1 Year	1 Year
JOINTEK COMPUTER SYSTEMS	**20Mhz System With 2 MB RAM $2450**	**12Mhz System $999**	**12Mhz System $459**

386 Your XT/AT With A 386 Motherboard By Appointment Only $1450

Models

T-1000	$780
T-1200	2300
T-3100/20	3100
T-3200	3800
T-5100	4950

SYSTEM BOARDS

386 (20 Mhz)	$1350
286 (12/6Mhz)	350
286 (10/6Mhz)	285
Turbo XT (8/4.77Mhz)	80
Turbo XT (12/4.77Mhz)	95

INTERFACE CARDS

XT Multi I/O	$57
XT Floppy Controller	21
1.2MB Floppy Controller	45
XT Hard Disk Controller	65
XT RLL Hard Disk Controller	75
AT Hard/Floppy Controller	125
RS-232	25
Printer Card	20
Game/Time Card	35
AT I/O	50

MONITORS

Mono	$75
Color	250
EGA	350
Thomson Multi-scan	439
NEC	Call

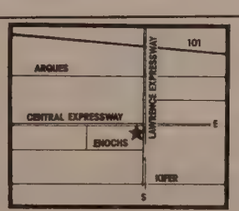
VIDEO & RAM CARDS

Monographic/printer	$45
Color Graphic	40
Color Graphic/printer	45
EGA/HGC/132 col. (640x480)	149
Genoa Super EGA (800x600)	185
AT 2MB EMS Card (OK)	85

DRIVES & MISC.

1.2MB Floppy Drive	$85
360K Floppy Drive	70
720K 3½" Drive	90
1.44MB 3½" Drive	115
20MB Hard Disk ST-225	Call
30MB Hard Disk ST-238	Call
40MB Hard Disk ST-251	379
80MB Hard Disk ST-4096	769
Math Coprocessor	Low
Mouse	60
AT/XT Keyboard	40
Enhanced Keyboard	50
150W Power Supply	49
200W Power Supply	69
Modems 1200B/2400B	Call
Printers	Call
XT/AT Case	25/55

MONTHLY SPECIAL
Enhanced
101 Keyboard
$49
For XT, AT, 386, or OS/2



YOU WILL LIKE OUR SERVICES

JOINTEK (408) 746-3976

3080 Lawrence Expressway, Santa Clara, CA 95051

Prices subject to change without notice

WEST EAST Computer Shows & MICROTIMES PRESENT THE FOLLOWING

COMPUTER SHOWS & SALES

► Saturday & Sunday 7/9 & 10
Oakland Computer Show & Sale
Special Macintosh Section!
Oakland Coliseum Exhibition Hall
Take Hwy 880 to Hegenberger exit.

► Saturday 7/16
Santa Rosa Computer Show & Sale
Luther Burbank Center
50 Mark West Springs Road
Hwy 101 to River Road exit
Right on Mark West Springs Road

► Saturday 7/23
Santa Clara Computer Show & Sale
Santa Clara Convention Center
5001 Great America Parkway
Across from Great America.

► Saturday 8/6
Marin Computer Show & Sale
Marin Civic Center Exhibit Hall
N. San Pedro Road exit off 101,
Left on Civic Center Drive

► Sunday 8/14
Sacramento Computer Show & Sale
Sacramento Scottish Rites Center
Hwy 80 to 30th St. exit.
Follow 30th to 8th St. Turn right.

► Sunday 8/21
Vallejo Computer Show & Sale
Solano County Fairgrounds
Exposition Hall
Across from Marine World

TREMENDOUS SAVINGS

NEW PRODUCTS
CLOSE OUTS
OVER STOCKED
HARDWARE
COMPATIBLES AND CLONES
SOFTWARE
BARGAIN PRICES
MAJOR BRAND NAMES
DISCOUNTERS
PERIPHERALS
WHOLESALERS
ALL UNDER ONE ROOF!
SAVE!

► ALL SHOWS 10-5 PM
Admission $5.00 Kids 12 & under FREE

EAST-WEST COMPUTER SHOWS
(formerly Golden Gate Shows)
CALL FOR INFO: (415) 388-8893

ers Group (EBMUG). Meetings: 3rd Tues. West Berkeley Library, 1125 University Ave., Berkeley. Members recieve free PD software. Bring blank disk. Write: P.O Box 7816 Berkeley, CA 94707-0816.

MICROSOFT

Mirosoft Word SIG of the SVCS. Meetings: 4th Mon. 7:30 PM Hewlett—Packard, Oak Room, Pruneridge at Wolfe, Cupertino. Contact Bill West (408) 356-8805 or Hunter Jackson (4080 446- 4097.

Mac Diablo Users Group (MDUG). Meetings: 3rd Tuesday, 7:30 PM, Community Room, Glendale Federal Savings, 3101 E. Crow Canyon Rd., San Ramon. Small, helpful group.

MORROW

BAMDUA (Bay Area Micro Decision Users Assoc.). Meetings: 3rd Tues. 7:30 PM Albany Senior Center,846 Masonic Street (just north of Solano) in Albany, CA. Voice:(415) 534-4257. BBS:(415) 654-3882. P.O. Box 5152 Berkeley CA 94705.

San Francisco Computer Society. Meetings: 1st Monday, 7:00 PM, Homestead S&L, 5757 Geary Blvd., San Francisco. CP\M and DOS machines. No BBS. Call Ralph Gallagher, (415) 929-0252 for information.

NEC

Bay Area NEC/100 Users Group. Meetings: 1st and 3rd Thur. 7:30 PM Room 209C at College of Alameda. For those interested in laptops, especially Kyocera 80C85 type (NEC 8201a, Radio Shack Model 100 or 102. Call (415) 658-1889.

NOVELL

Novell Users Group - Silicon Valley. Meetings: 3rd. Wed. 7 PM 1170 Morse Ave., Sunnyvale, CA.

ORACLE

Northern California Oracle UG. Meetings: Call (408) 738- 8330 for info. meets every 3 months at different Bay Area locations. Newsletter published between meetings.

OSBORNE

San Francisco Computer Society. Meetings: 1st Monday, 7:00 PM, Homestead S&L, 5757 Geary Blvd., San Francisco. CP\M and DOS machines. No BBS. Call Ralph Gallagher, (415) 929-0252 for information.

PARADOX

San Francisco Paradox Users Group. Meetings: 3rd Wednesday, call Jeffrey Edwards Co. for information, (415) 543-6227.

San Francisco Paradox Users Group, South Bay Chapter. Meetings: 3rd Tuesday, call Jeffrey Edwards Co. for information, (415) 543-6227.

PLUS/4

PLUG (The Plus/4 Users Group). No regular meetings. Over 800 members internationally.

TANDY/RADIO SHACK

Tandy 1000 (The Mug). Mail-based user group w/ monthly newsletter. Not for PC jrs. Members communicate through newsletter. $8/yr. fee; checks to: Daniel Tuma, 30 Arjang Ct., Alamo, CA 94507-2041.

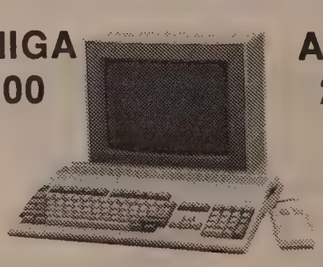
BYTE Bandits of America. Meetings: Campbell. Call (408) 379-2774 for info.

Model 100, 102 & 200 Support. Meetings: Int'l support by mail, voice & BBS. Free on-line weekly news letter. Write Club 100 984 Hawthorne Dr., Walnut Creek, CA 94596. Or call (415) 937-5039.

TRS Nybblers. Meetings: 2nd Fri. 8 PM Chabot College, 25555 Hesperian Blvd., Hayward. MS-DOS,

IF AN AMIGA IS FOR YOU

AMIGA 500



AMIGA 2000

THEN YOU NEED HT ELECTRONICS

HT HAS THE LATEST
SOFT WARE AND HARDWARE

FA 18 Interceptor
Excellence
Pro Video Plus
3D Video Effects
Capone & Light Gun
Deluxe Photo Lab
Arexx
AmigaTex
30/47 MB SCSI Hard Drives
Overdrive - SCSI Controller
Subsystem for Amiga 500
Easyl - Digitizing Tablet
Fujitsu Color Plotter
Synergy 30 MB Hard Disk
HP Paintjet Printer
Star Rainbow Printer

HT ELECTRONICS, INC.

346 W. Maude Ave.
Maude and Mathilda Aves.
Alpha Beta Shopping Center
Sunnyvale, CA 94086
408-737-0900

HOURS
M-F 9:30-6:00
Sat 9:00-5:00

5379 Prospect Rd.
(Lawrence and Prospect)
Westgate West Shop. Ctr.
San Jose, CA 95129
408-255-1490

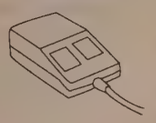
AUTHORIZED COMMODORE/AMIGA SERVICE CENTER
ASK ABOUT OUR HT CREDIT CARD

Zoltrix

Innovative Products For Less

DEALERS and CONSULTANTS ONLY

Mouse

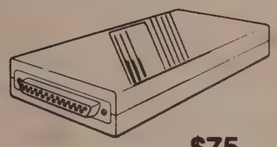


$28

- Logitech 2 Button w/Driver
- 9 & 25 Pin Serial Port Adapter

Made in USA

External Pocket Modem



$75

- 1200 BPS Battery Operated
- LED Lights, AC Adapter w/Software

PS/2 Mouse

- Special Order
- Logitech 2 Button
- 100% PS/2 Compatible
- Made in USA

$75

Internal Modem
JULY SPECIAL

- 2400 BPS for XT or AT
- Fully Hayes Compatible w/ Software
- Made in USA

$99

Others

- EGA Card $99
- VGA Monitor $350
- VGA Card & Monitor $499

We Accept VISA, MasterCard, and COD Orders

Please Call for Quantity Pricing

All products come with a 30-day money-back guarantee and a one-year warranty.

42000 Christy St.
Fremont, CA 94538

(408) 263-9183

SALE NEVER ENDS AT DATAWEST!

Full Page Monitor w/CC Mac $729

55 Fonts for HP Cartridge $575

10 MB Int. Bernoulli Tech. $699

HP DESKJET	$675
TOSHIBA T5100	$4595
HP LASER SII w/Toner	$1599
AST 386 20 40 MB SYSTEM	$4095
EVEREX 386 20	CALL
APPLE MAC SE	$1895
FAX MACHINES as low as	$755
AMSTRAD XT 640, 1 Fl System w/Mouse	$695

Some of the products that we carry IBM,COMAQ, APPLE, NEC, TOSHIBA, NEC ALLOY, ACER, EVEREX, WYSE, EPSON, OKIDATA, and other hardware and software for APPLE & IBM

• SERVICE CONTRACTS • NETWORKING • REPAIRS •
• TRAINING • DELIVERY • PICK-UPS • LOW END XT/AT/386 •
• DEALER INQUIRIES WELCOME • CORPORATE POs WELCOME •

DATA WEST

FAX # (415) 659-1280

Tel # (415) 490-6494

Understanding your ideas is our business

We offer a personalized approach to typesetting and graphic services to meet your needs for brochures, newsletters, catalogs, price lists and other publications.

We provide quality work for your complicated forms and pay keen attention to the fine typography requirements of advertising projects.

Graphic Design • Typesetting

Transfer of your Macintosh or IBM compatible discs

image factory

4122 Broadway, Oakland, CA 94611

(415) 653-7793

NEW

20 MHZ
386 Compaq Compatible

$1745

1 MEG BASIC SYSTEM

- *3 DRIVE CASE*
- *200 WATT POWER SUPPLY*
- *101 KEYBOARD*
- *1 YEAR WARRANTY*
- *FCC CLASS B*

12 MHz 0Wait AT Compat Basic System

$795

80MB (28MS) Seagate ST 4096 Hard Disk

$595

We Carry All Parts for IBM PC/XT/AT & 386 Compatible System

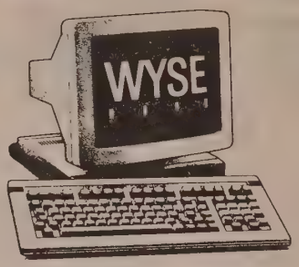
BEST PC SUPPLY INC.

415/875-6888

1203-1205 Grandview Dr. So. San Francisco, CA 94080

Mon.-Sat. 10:00 a.m.-6:00 p.m.

Wyse sells more terminals than anyone but IBM. The WY-99GT shows you why.



WYSE-99GT

The WY-99GT gives you two worlds of compatibility. It fits perfectly into the DEC VT-220 environment. It's also fully AT compatible. In fact, if you want to turn your AT into a multi-user, the WY-99GT is your most cost effective solution.

If you need great pricing, quick delivery, responsive service for this or any other WYSE products, call:

GRANITE
COMPUTER PRODUCTS, INC.

(800) 443-ROCK (Inside CA)
(800) 327-8489 (Outside CA)
1350 S. Loop Rd., #150, Alameda, CA 94501
(415) 748-6011

CP/M, laptops, Mod 1, 3, 4, Mod 2, 12, 16, 6000. Bud Gallagher (415) 522-5960 or Bruce Jarvis (415) 846-3575.

REVELATION

Bay Area Revelation UG. Meetings: 1st Tues. Call (415) 759-1210.

SANYO

Sanyo PC Hackers. Meetings: 1st Wed. 7 PM Mercury Room, Mercury Savings & Loan, 99 El Camino Real, Menlo Park.

SOLOMON

Solomon User Group of Silicon Valley. Meetings: For info contact Grihalva Associates, 39899 Balentine Dr., Suite 175, Newark CA 94560.

San Francisco Solomon III Users Group. Meetings: last Wed.,odd months 6-9 PM Price Waterhouse, 555 California St. 36th Fl., San Francisco. Annual membership - $50; corp. membership - $75.

S—100

S—100 Business Users Group. Meetings: 4th Tues. 7:30 PM Santa Clara Univ., Rm. 101, Bannan Engineering Bldg. CP/M & MS-DOS libraries. BBS: (408) 262-5150, 8-N-1,2400/1200/300.

TEXAS INSTRUMENTS

Brea 99'ers Users Group. Meetings: 1st Mon. 7:30 PM Mercury Savings, La Habra, CA.

Thousand Oaks Personal Computer Club (TOPCC). Meetings: monthly. Call: (714) 686-0336.

TIMEX/SINCLAIR

Timex/Sinclair Users of Silicon Valley (GUTS/SV). Meetings: each Sat. 9 AM Stanford Univ., Jordan Hall (quadrangle), Math Bldg. RM 380C. SW library & newsletter. For topic check PDSE BBS in Sunnyvale (408) 735-7390, 300/1200, 8-N-1, 24 hrs.

VENTURA PUBLISHER

VPUG (Ventura Publisher User Group). Meetings: 3rd. Mon. 6:30 PM Fort Mason, Bldg. A., Rm. 5 San Francisco, CA.

Ventura Desktop Publishing Users Group. Meetings: 1st Tuesday, 7-9:00 PM, 1650 S. Amphlett Blvd., San Mateo. Newly formed group. Call Eleanor Church at (415) 726-3181, or Pam Sheble att (415) 574-2003 for information.

Send your User Group information to:
USER GROUPS
5951 Canning St., Oakland, CA 94609

Please limit descriptions to 15 words or less.

HOT SOFTWARE

$2 PER DISK — IBM PC COMPATIBLE — $2 PER DISK

Send $1 for 200+ Disk Catalog On Disk! $1 Shipping Per 5 Disks + .07 Tax

VP01	Virus Protection—5 Programs to Save You!	**P006**	Print Shop Clone
E001	PC-Write 2.71 With Spell Check (2)	**D001**	Dos Tutor
E003	PC-Outline 3.3 Memory-Resident	**LC024**	Turbo C Tutor (2)
S001	ASEASY Vers 3.0 1-2-3 Clone	**B026**	Flashbak—Hard Disk Backup
DB001	PC File Plus 2.0 (3)-Super Data Base	**M000**	ProComm Plus-Modem Program
DB008	Dbase Program Generator (2)	**E009**	Homebase 2.5 Sidekick + (3)
U010	Great Mail List Manager-Mass Appeal 3.0	**U001**	PC Mag 100+ Utils (2)
D005	Still River Shell V, 2.24	**B011**	Hard Disk Menu III-Forget Automenu
B002	EZ Forms Generator	**P004**	City Desk 6.0 Dot matrix Desk Top Pub
B022	Disk200 Norton Advanced Utils Clone (2)	**L005**	QEdit 2.06 Brief Clone-Super Editor

P005 LQ Print-New Version 2.26 Letter Quality with 17 Fonts on Dot Matrix

3½" Disks Available—$3 each or 2 360K for $4.50

GENERIC COMPUTER SYSTEMS

22612 FOOTHILL BLVD., SUITE 200C, HAYWARD, CA 94541 415-581-1494

Walk-in Hours 9-7 Mon-Wed-Thur-Fri

What's Happening?

Check the MicroTimes Calendar of Events in this issue for computer-related classes, seminars, and shows in your area.

Apple	Cash	MC/Visa
Mac Plus	$1249	$1279
Mac SE	1949	1999
Mac SE 20M	2499	2559
Mac II 1 Dr	2599	2679
IIGS, RGB, 1Dr	1349	1389
Computers (CPU Only)		
Hyundai XT 2Dr	$779	$799
Hyundai XT 20M	949	979
Hyundai AT 1Dr	1099	1129
Hyundai AT 20M	1449	1485
Equity 1+ 2Dr	799	821
Equity 2+ 20M	1399	1435

Laser Printers	Cash	MC/Visa
AST Turbo	$2799	$2885
HP Laser II	1749	1800
General Comp	1499	1549
Epson Printers		
FX 86e	$349	$359
FX 286e	399	411
LQ500	369	380
LQ850	549	566
LQ1050	759	782
EX800	449	462

$150 rebate on ImageWriter printers.

Call for Store Nearest You
415-465-2488

Prices expire 7/31/88. Prices with this ad only.

NOW! OPENING TO THE PUBLIC

TODAY Computers

OWNED & OPERATED BY ENGINEERS

COMPUTERS - SOFTWARE - ELECTRONICS

WHOLE SALES • RETAIL • SERVICE • TRAINING

98 S. ABEL ST., MILPITAS, CA 95035
Sale: (408) 263-6066
Technical Hot Line: (408) 263-6067

10 MHz 286

10/6 MHz Motherboard
512K RAM Expandable to 1MB
200 Watt Power Supply
1 2MB Floppy Drive (Controller)
Enhanced Keyboard (101)
Monographics/Printer Card
Hi-Res Mono Amber Monitor

$799 COMPLETE SYSTEM

TURBO XT

8/4.77 MHz Turbo Motherboard
256K RAM Expandable to 640K
150 Watt Power Supply
360K Floppy Controller
360K Floppy Drive
AT Type Keyboard
Monographics/Printer Card
Hi-Res Mono Amber Monitor

$425 COMPLETE SYSTEM

We Wholesale Products.
We Upgrade & Repair Computers
Call For Your FREE Estimate

MOTHERBOARDS | ADD ON BOARDS | MONITORS | DISK DRIVES

**** AT LOW PRICE ****

PRICE, QUALITY, SERVICE

EXP 80386 System

- 20 MHz 0 Wait Clock Speed
- 1 MB memory installed expandable to 2MB, 80287/80387 Socket
- 230W power supply
- Case
- 1.2MB floppy disk
- Hard disk & floppy controller
- Keytronics 101 keyboard
- 2 serial/2 parallel
- Built in EGA board
- Printer port
- 32 bit slot
- Made in USA

$2,250

YOUR LAST COMPUTER SYSTEM

*Available with Tower case

EGA Option . . . $350
20MB HD. $225
40MB HD. $385
70MB HD. $675

EXP 80286 System

- 512K memory
- 80286 10 cpu Phoenix Bios
- 6/10 MHz 0 wait
- 1.2 MB floppy drive
- Printer port
- Hard/floppy disk controller
- Real time clock
- Hercules compatible mono card
- 12″ tilt & swivel monitor
- Keyboard
- Hardware reset switch
- Turbo mode switch & LED
- 230W power supply.
- Keyboard
- No hidden cost - ready to run!
- Optional Tower case
- OS/2 tested

$875

12 MHz 0 WAIT System ONLY $980

EGA option $350
20MB Hard disk $225
40MB Hard disk $385
70MB Hard disk $675

EXP 8088 System

- 512K memory - expandable to 640KB
- 4.77/10 MHz clock speed.
- 360KB floppy drive.
- Serial port.
- Printer port.
- Game port.
- Real time clock.
- Hercules compatible mono card.
- 12″ Tilt & Swivel amber monitor.
- Keyboard.
- 150W power supply.
- Case.
- Keylock switch.
- Power on LED.
- Turbo mode LED.
- Hard disk drive LED.
- Hardware reset switch.
- No hidden cost, Ready to run.
- Optional NEC V20 (SI:4.0)

$560

640KB memory $610
20MB hard disk. $275
Second floppy $75

EXP 80286/16 MHz System

- 512K memory-expandable to 1MB
- 80286-16 cpu, Phoenix Bios
- 8/16 MHz clock speed
- 80287 socket
- Express RAM slot expands memory to 8MB running at full processor speed
- Memory beyond 1MB configurable as expanded, expanded (LIM 4.0)
- 1.2MB floppy drive
- Printer port
- Hard/floppy controller
- Real time clock
- Hercules compatible mono card
- 12″ amber TTL monitor
- Keyboard
- Hardware reset switch
- 230W power supply
- State of the art, NEAT chipset
- CPU board is made in USA
- Norton SI=18.7
- No hidden costs - ready to run!

$1295

Non-Volatile EMS/RamDisk Multifunction Board

- 2MB EMS with optional piggy back
- Serial port, parallel port
- Realtime Clock
- Upgrade your system memory up to 640K
- Keeps data after power off
- Made in USA

$69

Star NX 1000 Multi Font Printer

- 144 CPS high draft speed
- 36 CPS NLQ printing
- 8 built-in NLQ fonts
- Proportional printing available
- Push button control panel
- Paper parking mechanism
- Tractor and friction feed
- IBM Proprinter/Epson emulation

Free Cable $189

Micropolis 70MB Hard Disks

- Standard ST506/ST412 Interface
- 28 ms fast access time
- 110 MB capacity with RLL controller
- Can be mounted and operated in any orientation (vertical or horizontal)
- Auto parking mechanism

$675

*Installation available on your 8088, 80286 or 80386 system.

Nanoa Flexscan Monitor

- 820 x 620 resolution
- 0.28mm fine dot pitch (model 8060S)
- Scan frequency between 15.75 KHz & 35 KHz
- IBM, CGA, EGA, PGA, & VGA compatible
- 14″ non-glare CRT
- Built-in tile & swivel base
- TTL and Analog input
- Amber or B/W text mode switch
- Compare with NEC Multisync. It's much better.

(Model 8060S) $545

Adaptec RLL Floppy Hard Disk Controller

- 1:1 interleave
- 750KG/sec data transfer
- Handles 2 hard & floppy drives
- On-board low level format S/W
- Surface mount technology
- Most accurate 2,7 RLL data separator
- Drives with up to 16 head & 4096 cylinder
- Best performance & speed

$199

DTK 360K/1.2M/720K 1.4M Floppy Controller

- Handles any combination of 360KB/1.2MB/720KB/1.4MB floppy drive on 8088
- Easy to use

$55

Quadram AT I/O Card

- 1 printer port
- 1 serial port (DB 9 pin)
- LPT 1-2, COM1-4 selectable
- Made in USA

$35

JC 14″ EGA Monitor

- 640x350 resolution
- Amber/green text mode switch
- Best quality, same as Epson, Packard Bell EGA monitor

$339

JC 14″ TTL Monitor

- 720x350 high resolution
- Amber or green available
- Built-in tilt & swivel base
- 110/220 volt switchable

$95

Everex 3 MB EMS (LIM 4.0)

- 3 MB EMS or extended memory
- OS/2, Unix, Xenix compatible
- Use 256KB DRam
- Works with your 80286/386 system

$85

Everex 10MB EMS

- 10 MB EMS or extended memory
- OS/2 compatible
- Use 1 MB DRam
- Works with your 80286/386 system

$145

MONITORS

Samsung 12″ TTL	$75
JC 14″ TTL	95
JC 14″ EGA	339
Nanoa Flexscan	545
14″ TTL white soft	125

ADD ON BOARDS

Multi I/O (FDC,S,P,G,C)	$55
Mono graphic/printer	49
Color graphic	45
1.2MB/720K/1.4MB FDC	55
Everex 1200B Modem	85
Everex 2400B Modem	195
Hard controller	59
RLL controller	85
Controller MFM/RLL	119/145
Everex 3MB EMS (Lim 4.0)	85
ATI EGA wonder	189
Mono 132 Column/Printer	59
Everex EGA (800 x 600)	150
Everex EMS multifunction	75

PRINTERS

Ricoh daisywheel (22 cps, 132 col.)	$199
Epson LQ 500	385
Citizen 180D	185
Citizen 120D	150
Panasonic 1091i	215
NEC P2200 24 pin	349
Epson LX-800	209
Star NX-1000	189

DISK DRIVES

Fujitsu 360K/1.2MB	$69/89
3.5″ 720KB/1.4MB	89/125
ST225/238 hard disk	225/239
ST251/ST251-1 hard disk	385/450
ST4096 hard disk	700
ST125/138 (3.5″, 28ms)	255/355
Micropolis 70MB	675

CPU Boards

8088 cpu bd (4.77/8MHz)	$75
8088 cpu bd (4.77/10MHz)	79
80286 cpu bd (6/10MHz)	259
80286 cpu bd (6/12MHz)	325
80286 cpu bd (8/16MHz)	495
80386 cpu bd (8/20MHz) (1 MB memory, EGA, 2S/2P)	1,700

MISCELLANEOUS

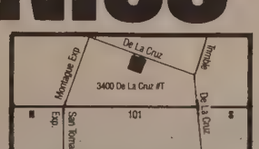
Handy scanner	$215
Keytronics 101 keyboard	55
Jr. Case/150W PS	38/43
Case/230W PS	58/89
Logi bus/serial mouse	75
DSDD diskette 1 BOX	4
DSHD diskette 1 BOX	9
MSDOS 3.3	89
Curtis universal printer stand	19
AC multi outlet	10
Printer cable	5

JEMINI ELECTRONICS

3400 De La Cruz Blvd., Suite #T
Santa Clara, CA 95054
Tel. (408) 727-9986
Fax. (408) 727-7687

M-F: 9-7PM Sat 10-4PM

PC/XT/AT are registered trademarks of International Business Machines Corporation.
Above prices are based on cash or check.



Prices subject to change without notice.
UPS Shipping daily

CLASSIFIEDS

EMPLOYMENT OFFERED

TELEPHONE SALES

Computer Hardware Distributor Looking For Experienced Telemarketing People. Openings Due to Expansion. Will Consider Candidates With No Experience, With Good Phone Skills, Positive Attitude & Enthusiasm. Salary, Commission & Benefits
Contact: Bill at (408) 297-9800
E.O.E.

Tech writers wanted. Contract/ employment. Experience, SCRIPT, PC, MacIntosh. Send resume & writing samples to: EA, Box 647, Orinda 94563.

Earn extra income at home. Own IBM/ compatible and modem? Make big money in communications industry with your PC. Experience unnecessary. For complete and immediate start up, send $10 to: New Founder Business, 774 Pine, SF, CA 94108.

EMPLOYMENT WANTED

Software developers: Do you need someone on your Product Development team with a sharp eye for type and graphics, experienced in production management, and familiar with the ways of artists, engineers and managers? Call Karl (415) 457-8122.

FOR SALE

AMERICAN ENTERPRISES PRESENTS

Custom Computer Covers for MAC, IBM, PS/2. Covers are high quality anti-static scotch guarded cloth. Available in black, beige, lt./dk. gray, and mauve. Please specify computer type and monitor size. Protect your investment.
Send check or money order, Visa/MC for $19.95 to:
American Enterprises
3959 Wilshire Blvd. Suite 485
Los Angeles, CA 90010
California residents add $1.30 (6.5%) for sales tax.

FOR SALE

LOSS LEADERS
(WHILE THEY LAST)

80286-8 PLCC 6.95
48C02 ENHANCED SRAM 2.95
8086 OR 8088 ..... 1.95
68020-12 ..... 49.95
68000 OR 68008 ..... 1.95
68010-10MHZ 9.95
68766 EPROM 2.50

All of the above except 48C02 are full lead pulls. 48C02 is Mostek new surplus. All parts unconditionally guaranteed 30 days. Ask about other ICs and our retrieval service.

KRUEGER COMPANY
(800)245-2235

Disk and Tape Conversions

High quality conversions services and OCR scanning for Dedicated Word Processors, Mini and Micro Computers. Over 1000 3½", 5¼", 8" formats. Also 800-1600 BPI tape. Conversion between Wang, NBI, CPT, DEC, Vydec, Lanier, OS-6, Xerox, IBM Sys/34/36/38/5520, Mac, Victor, TRS, Apple, NSTAR, IBM-PC/AT/3½", HP, and most other microcomputers. We can convert directly into word processing software MS/WRD, WS, Samna, MM, PFS, and many others.
(408) 629-1088
DataFormats INC.

HARDWARE FOR SALE

IBM Pro-printer XL LQ single and tractor feed. Used 3 hours. Great condition. $499. (415) 657-6893.

Two 60-Mbyte tape backups. Archive model 5945-C with interface card. Perfect condition. $300.00 each. Call (408) 462-6964 anytime.

Apple III Complete, external drive, 20mb Corvus hard disk, Multiplexer, software. Best offer. Cecile, (415) 947-5811.

IBM SOFTWARE ONLY $1.99 PER DISK
For FREE 16 page catalogue call The Pacific Exchange 24 hr. Software Hotlines:
Voice: **(408) 946-3663**
Modem: **(408) 946-8561**
SATISFACTION GUARANTEED

HARDWARE FOR SALE

Gavilan laptop portable, Wordstar + Communications software, internal modem, DOS, IBM comptble, + more, $500, Matt (415) 381-9037.

IBM- AT Compatible HP Vectra 2 1—2M FD 640K 80287 RS-232/ Centronics. Must sell (408) 727-1295.

Northstar Horizon, 2 floppy drives, wood case, no terminal, excellent condition. Bruce, (415) 658-9545, leave message.

DRAMS WANTED
(408) 243-1571 ANYTIME
New or used DRAMS wanted. Memory boards wanted. Failed PC-Clone boards wanted for removal of IC's.

QDG RENTAL DEPARTMENT
We Rent Daily/Monthly/Weekly
Lowest Lowest

TOSHIBA
T-1000/1200 ..... $779/2175
T-3120 MB. $3099

HEWLETT PACKARD
Laser Series II. $1625
1 MB expansion HP/compatible .. $325/299
2 MB expansion HP/compatible . $690/620
HP Scanjet scanner/Deskjet .. $1295/699

COMPAQ
Deskpro Models
286 1/20/40 MB $1800/2250/2525

IBM
PS II Model 80 44MB/70MB. .... $BEST

LASER/ FAX/ SCANNER
RENTALS
Next to Egghead Clearance Center
Rent computers/monitors/FAX/printers/ scanners/lasers by the week or month
(213) 312-5046
Quality Distribution Group
(213) 478-9811
11651 W. Pico
Los Angeles, CA 90084

HARDWARE FOR SALE

IBM PS-II Model-25, monitor with 720 KB diskette drive, keyboard, brand new. $700. (415) 553-4035 evenings.

Tandy 1000 640k, CBA Color, two 5 1/4" drives, 1200 modem, software, joysticks, $750. (408) 225-2011.

Altos 1086, 80286, 2 MB RAM, 130 MB HD, 5 terminals, Cobol. (415) 929-1500, Jim or Laura.

New floppy disk drives for Commodore 64 & Vic 20, $100 ea. James (408) 745-0933.

Hewlett Packard Paint Jet color printer; hardly used $800 (415) 647-7849.

Panasonic Sr. Partner: 512K, 2 floppies, antiglare screen, software. Low mileage. David 873-1200 Tues/Fri. B.O.

Epson LQ-1000 with tractor feeder and IBM graphics module. Like new! $475. (415) 665-5575, Chun.

CDC 30MB HARD DISK/ AT. Unused, md# BJ7D5-A $250 also French/ German kybd/ AT keytronic $150 (415) 526-9464.

Apple 800K disc drive for Mac or Apple II GS; mint condition. $150.00 call Tony, 863-0348, leave message.

IBM PC Compatible Turbo XT, color card, 20 mb hard disk drive, color monitor, Okidata 182/ printer, Multitech smart modem, televideo terminal, and assorted software. All new under warrantee, $1500.bo (415) 331-9103.

HARDWARE FOR SALE

NEC MultiSpeed HD 20mg with case, modem and software $2400 obo call (415) 751-9002 leave message.

OFFICE SPACE

Attn software/ programming companies: an excellent sub-lease opportunity is now offered at the prestigious Harbor Bay Business Park in Alameda. This luxurious space features 2 window offices & a large bay for programming staff w/ shared access to a conference/demo room along w/coffee room, copy room, & common entry/ reception. Approx 1,000 sq. ft. Call Dave (415) 769-4999.

SERVICES

Database Services— We build Databases for PC's DataBase Management Inc. in Walnut Creek (415) 934-1636.

DISK & TAPE Conversion
8" - 5¼" - 3½" *disks*
6250-1600-800 bpi *tapes*
OCR Scanning
100s of Formats
- Word Processors
- Typesetters
- Mainframe/Minis
- PCs: MS/DOS, CP/M, Mac Apple, Unix, Xenix, PC MOS
- Software Pkgs. dBase, Lotus, etc.

Special conversion problems solved - Questions welcomed
Convert-It!
5120 Campbell Av., Suite 201
San Jose, CA 95130
(408) 370-0123

To Place A Classified Ad:

FREE ADS: Private individuals may have one free classified ad of 15 words or less (in all categories EXCEPT "Personal"). Additional words are 50¢ per word. A phone number, including area code, counts as one word. If you want your ad to run more than once, all subsequent printings will be charged at one half business rates.

BUSINESS ADS: Rates are $15 for 15 words or less. 50¢ for each additional word. Again, your phone number counts as one word.

TO ORDER BY MAIL: SEND COUPON TO:
MicroTimes Classifieds
5951 Canning St.
Oakland, CA 94609

TO ORDER BY PHONE with Visa or MasterCard only, call **(415) 652-3810**

For a mere fraction of your paycheck—buy, sell, trade ... whatever! Just $15 for the first 15 words plus 50¢ for each additional word, per issue.

CATEGORY
- ❑ Employment Offered
- ❑ Hardware For Sale
- ❑ Software For Sale
- ❑ Employment Wanted
- ❑ Office Space
- ❑ Video
- ❑ Personal
- ❑ Wanted
- ❑ Equipment
- ❑ Services
- ❑ Will Trade

Cost of ad_____ **X number of issues to run**_____**=Amount Enclosed**_____

Send Check ❑ Money Order ❑
Visa ❑ or MasterCard ❑ Exp. Date _____
Account # _____
Signature _____

Advertisers Name _____
Street Address _____
City _____ State _____ Zip _____
Phone (_____) _____

Send To: MicroTimes Classified: 5951 Canning Street, Oakland, CA 94609

DEADLINE FOR INSERTION IN THE SEPTEMBER ISSUE IS NOON ON MONDAY, AUGUST 8, 1988

brother Printer Sale!

Brother printers are known for their reliability, performance and versatility. Presented here are a few state-of-the-art printers for your word processing and data processing needs. Let Brother put your reputation on paper!

M-1109

M-1109 — 100cps, 80 column printer with near letter quality mode. 2K buffer. Compact (13"x2.8"x7.6") & lightweight(7.8 lb.) design. Ideal for use with portable or lap-top computers. Complete with tractor . . .$219

NEW! HR-40 — A high speed daisywheel printer that make you look good on paper. 40cps, 136 column. Built in push-type tractor would not waste the first form. Built-in single-sheet feeder makes it the best price-performance daisywheel printer. A unique paper parking feature lets you insert single sheet without removing continuous form. $625

HR-40

M-1509 — Our best seller! 180cps (45 cps NLQ), 136 column. Unique side-mounted cable connection would not tangle form paper and push-type tractor would not waste the first form. Single push button for near letter quality printing. 3K buffer. IBM & Epson compatible. . . .$359

M-1509
M-1709
M-1724

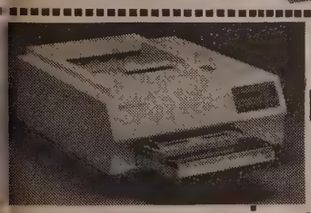
M-1709 — It has features similar to 1509 but high speed 240cps (50cps NLQ), 136 column, large 24K buffer. Unique push-type tractor and paper parking features. Heavy duty printhead for business use. Quiet . . $459

NEW! M-1724 — A truly versatile text and graphic printer with its 24-pin head and 216cps output (72cps NLQ), 136 column. Advanced paper parking feature lets you switch to single sheet without removing the continuous forms. . . . . $Call

Twinriter-6

M-2518 (New!) — A data processing work horse. 18-in, 360cps, can handle 6-part form with its unique straight-thru paper path, plus quto paper thickness adjustment, paper express and paper parking features. Optional color printing. . . . . $Call

NEW! Twinriter 6 — If you believe 2 heads are better than one, this is it! The dot matrix head creates crisp graphics and prints draft text at 200cps and its daisywheel prints letter quality text at 36cps. Compatible with the new integrated text/graphics software such as Lotus & Framework. $Call



LASER PRINTER SALE

H-P LASERJET VER. II — 512K memory, 8 page/minute, 300x300 dot resolution, 6 resident fonts . . . . . $Call

BROTHER HL-8 LASER PRINTER — 1 MB memory, 8 page/minute, 300x 300 dot resolution, 20 resident fonts. 16-character LCD display gives instruction to user, H-P compatible (same Canon engine as H-P) . $ $Call

FORTIS PAGE PRINTER DP800 — 1.5 MB memory, 8 page/minute, 300x 300 dot resolution, H-P compatible, new Liquid Crystal Shutter technology with fewer moving parts, greater reliability and sharper image .$ $Call

FORTIS

Fortis DX-21 — 22cps Daisywheel printer, 1 year warranty . . .$349
Fortis DX-41 — 40cps Daisywheel printer, 1 year warranty . .$589
Fortis DM-1310 Printer, 130cps, 80 column. $225
Fortis DM-2010T Printer, 200cps, 80 column. $325
Fortis DM-2015T Printer, 200cps, 132 column $399

NEC

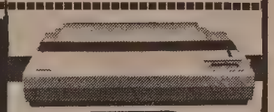
NEC 2200, 180cps, 80 col $395

OKIDATA

182+ — 200cps, 80 col $369
183+ — 200cps, 132 col $499
193E — 132 col $589
Module for 293E (parallel/serial) . $99

STAR GEMINI

SG-10, 24-pin, 80 column $375



EPSON

LX-800 — 80 col. w/tractor . . $245
FX-86E — 240cps, 80 col . . . $369
FX-286E — 240cps, 132 col . . $479
LQ-500 — 24-pin, 80 col. . . . $359
LQ-850 — 24-in, 80 col. $569
LQ-1050 — 24-pin, 132 col . . $769
LQ-2500 — 24-pin, 324cp . . . $945

CITIZEN

Citizen 180D — 150cps, 80 col .$199
Citizen MSP15, 160cps,132 col.$335
Citizen MSP25, 200cps, 132 col.$399
Citizen MSP55, 250cps, 132 col.$475
Citizen Premium 35 daisywheel .$479
Citizen Tribute 224, 24-pin . . .$599

TOSHIBA

Toshiba P321-SL— 24-pin . . . $535
Toshiba P341-SL — 24-pin. . . $725
Toshiba P351SX — 360cps. . .$1125

PANASONIC

Panasonic KX-P1080i — 80 col./$225
Panasonic KX-P1091i — 192cps .$269
Panasonic KX-P1092i — 240cps .$365
Panasonic KX-P3151 — 22cps . .$389

(Monitor Optional)

ENTERPRISE

ENTERPRISE XT-TURBO

- Fully IBM PC/XT compatible
- 640K on mother board
- 8 expansion slots
- 84-key keyboard with LED's
- 150-watt power supply
- Keyboard speed selectable from 4.77 MHz to Turbo speed
- Full one-year warranty
- Parallel printer port included
- Serial port included
- Game port included
- Clock/calendar w/battery backup
- Compatible w/EGA, CAD CAM, and networking systems

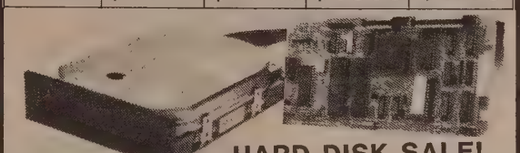
	640K memory 1-360K drive	2-360K and 20-MB Drives	2-360K and 30-MB drives	2-360K and 40-MB drives
8MHz	$639	$979	$1009	$1179
10MHz	$649	$989	$1019	$1189

(Monitor Optional)

ENTERPRISE 286

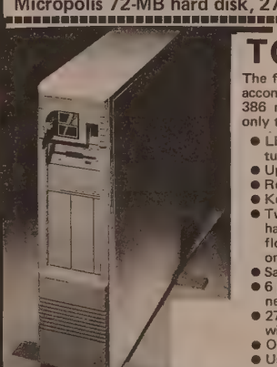
- Fully IBM AT compatible
- 512K memory — expandable to 1-MB
- Controller for floppy & hard disks
- 1.2-MB floppy drive
- 101-key enhanced keyboard w/LED's
- Keyboard speed selectable
- 200-watt power supply
- 8 expansion slots
- Clock/calendar with battery
- Full 1-year warranty

	512K memory 1 floppy drive	512K memory 2 floppy drives	2 floppy and 40-MB drives	2 floppy and 72-MB drives
12MHz	$1025	$1095	$1595	$1795



HARD DISK SALE!

Seagate 225, 20-MB w/W.D. controller. $259
Seagate 238, 30-MB w/W.D. controller. $329
Seagate 251, 40-MB hard disk only $359
Micropolis 72-MB hard disk, 27 ms . . *Special Sale* $699

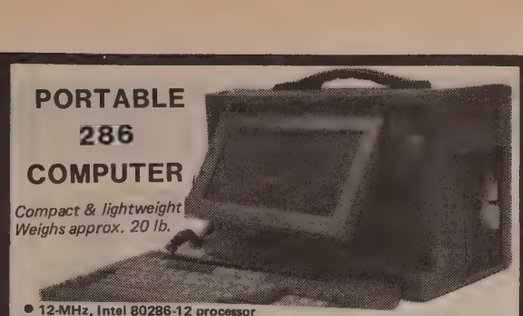


TOWER CASE

The finest tower case you can buy! Will accommodate PC/XT, AT, mini AT and 386 motherboards. Easy to open with only two screws.

- LED lights for power, hard disk, and turbo speed indications
- Up-front on/off switch
- Reset switch and Turbo switch
- Key lock
- Two 3½" slots for 3½" floppy or hard disk drives, two 5¼" slots for floppy drive or tape backup, plus one 5¼" slot for full ht. hard disk
- Same dimensions as IBM PS/2 60/80
- 6 port holes for parallel/RS-232 or networking connectors
- 275-watt heavy duty power supply with auto sensing 110/220 volt AC
- Optional AC fan included
- Unique folding legs

$275



PORTABLE 286 COMPUTER

Compact & lightweight
Weighs approx. 20 lb.

- 12-MHz, Intel 80286-12 processor
- 640K memory, expandable to 1-MB
- 80x25-line back-lit LCD screen w/reverse video switch
- 1.2-MB floppy drive
- RGB color port for external color monitor
- Auto sensing 110/220 VAC power supply
- Full featured keyboard w/12 function keys
- 5 expansion slots
- parallel & serial ports included

with 20-MB hard disk . $1,795
with 40-MB hard disk . $1,995

LAP-TOP COMPUTERS

Toshiba T1000, 512K, 1drive . $795
Toshiba T1100, 2 drives $1395
Toshiba T1200, 1 dr.,20-MB. .$2295
Toshiba T3100-20, 1 dir.20MB$3095
Toshiba T3200, 40-MB $3795
Toshiba T5100, 40-MB $4895
NEC Multispeed EL 2 drives. .$1495
NEC Multispeed EL,1dr. 20MB$2295

Modem Sale!

Everex 1200 internal $99
Everex 2400 internal $195
Everex 2400 external. $225
Hayes 1200 external $329
Hayes 1200B internal w/Scom $329
Hayes 2400 external $485
Hayes 2400B internal w/Scom $485

MONO COMB...*complete* $150
RGB COMBO...*complete* $300
EGA COMBO...*complete* $500
NEC 1402 Multisyn-2 monitor . $599
Samsung SM200 Amber w/base. $99
Samsung 14" RGB Color w/base $275
Samsung 14" EGA Color. $385
Sony FV1311 RGB & TV $469
Sony SPD1302 Multisyn Color . $599
Sony SPD1303 Multisyn Color . $555
Taxan 765 14" EGA Color . . .$385
Taxan 770 Multisyn Color . . . $499
TVM MD-7F 14" EGA Color . .$395
TVM MD-11 14" Multisyn color $495
TVM MM-11 14" Multisyn B/W. $195
Thompson 14" RGB Color . . .$289
Thompson 14" Multisyn color .$545

ADD-ON CARDS

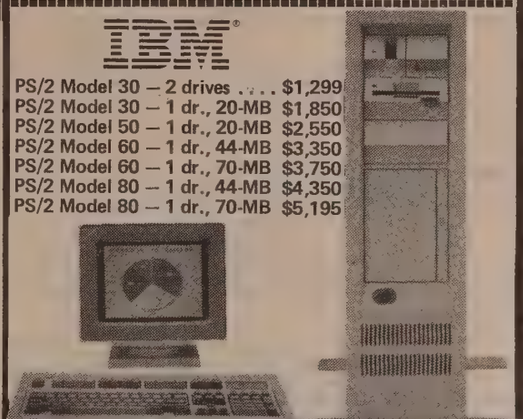
Hi-speed Monographics w/par . $75
Hi-speed Color card w)par.port $75
Multi I/O & floppy controller . $75
Four-Mode EGA Card $125
Par./serial/clock card for XT. . $69
Parallel/serial I/O card for AT . $65
RS-232 serial card. $29
Parallel printer card. $25
Multifunction memoryw/0K. . $125
Hercules color card w/par.port $155
Hercules Graphics-Plus $185
Hercules In-Color card $299
Intel Above board. $379
Genoa Level 7 EGA/VGA card $199
Vega Deluxe EGA/VGA card . $235

Western Digital WA2 Controller

For AT compatibles. Controls both hard and floppy drives. **$115**

IBM

PS/2 Model 30 — 2 drives $1,299
PS/2 Model 30 — 1 dr., 20-MB $1,850
PS/2 Model 50 — 1 dr., 20-MB $2,550
PS/2 Model 60 — 1 dr., 44-MB $3,350
PS/2 Model 60 — 1 dr., 70-MB $3,750
PS/2 Model 80 — 1 dr., 44-MB $4,350
PS/2 Model 80 — 1 dr., 70-MB $5,195



COMPAQ

Compaq portable 2, Mod. 2 .$1,950
Compaq portable 2, Mod. 4 .$2,575
Portable 3, 20-MB, 640K. . $3,435
Portable 3, 40-MB, 640K. . $3,995
Portable 386, 40-MB $5,495
Despro 286, 12-MHz,, 1 dr. $1,725
Despro 286, 12-MHz, 40-MB$2,950
Despro 386, 16-MHz, 40-MB$3,995
Despro 386, 20-MHz, 60-MB$5,395
Despro 386, 130-MB $6,595

All goods are brand new and guaranteed. All advertised prices already include a 2% cash discount for full payment by cashier's check, money order or cash. Personal or company checks must clear 3 weeks before we ship. Add 2% for credit card purchases. COD's are accepted for UPS shipments only and require 20% paid deposit and $3 COD fee. No COD's to Canada, Puerto Rico, FPO/APO or P.O. Boxes. Shipping & insurance charges by UPS Ground: $5 (card/modem/drive/software), $10 (monitor/printer), $15 (computer/plotter), $25 (laser printer/UPS/copier). UPS Blue: 3X Ground. UPS Red: 4X Ground. P.O.'s accepted from government agencies, Fortune 1000 firms and major institutions. Calif. buyers add sales tax. Prices subject to quantity available, correction or change without notice. You may call for the latest prices.

EASTERN ENTERPRISES, INC.
Mass Merchandising Since 1969
6001 BANDINI BLVD., LOS ANGELES, CA 90040
COME VISIT OUR GIGANTIC SHOWROOM & STORE

TOLL-FREE (ORDERS ONLY) **(800)392-7081**
Hours: Monday to Friday 8:30am – 5:00pm Pacific Time
Calif., Alaska & all info *Call* (213)725-3080
FAX: (818)992-0990

IBM PC, XT, AT are registered trademarks of International Business Machines Corp.

CLASSIFIEDS

SERVICES

Paradox, System design, programming, training, and support for Paradox. Call Pam Barringer (415) 573-9842.

COMPUTER MAILING LISTS— Computer Dealers, User Groups, Publications, End Users, and more. Send for free catalog. Buffalo Enterprises, PO Box 29 Sebastopol, CA 95473 (707) 823-3239.

LFL
USER FRIENDLY LIVEWARE
System Planning
Hardware Expansion
Printer Configuration
Equipment Brokering
Technical Writing
Laser Typography
Desktop Publishing
COMPLETE COMPUTER SERVICES
(415) 664-2406

AccounTech
dBASE/Clipper programming
for...Accounting (SBT and SourceMate)
Bar code systems
Project Management
Remote Systems
LANs (Novel Netware, PC/NOS)
Special Requests
(408) 985-2222
3031 Tisch Way, Suite 200
San Jose, CA 95128

Network & Consulting Specialists

- Documentation & Training
- Custom Programming— PC's, Mini's & Mainframes
- Multi-user Systems
- Inventory/Accounts Receivable Systems
- Gateways to Mainframes
- On-Site Maintenance Available
- Training & Support
- Call for FREE Consultation

International Micronet Systems
916 Clement Street, S.F., CA
(415) 752-8843
Refer to Display Ad Page

SERVICES

MARKET RESEARCH
RESEARCH INTERNATIONAL, a professional consulting firm with years of experience, can provide up-to-the-minute market insight profiles. Not just numbers, but also product identification, market segment income per capita, psychographics, image response studies, assistance with product development and ad campaigns. Contact us at 1150 "A" Coddingtown Center, Suite #103, Santa Rosa, CA 95401 or (707) 578-4142 Message Service. Where good products deserve GREAT handling.

BUSINESS CONSULTING
Small business, start-ups, business plans, management and technical assistance by an expert staff with years of experience. Rates based on your ability to pay. Call RESEARCH INTERNATIONAL (707) 578-4142 and leave a message. No client too small, no project too large, we deliver specific recommendations tailored to your business needs and designed to solve your problems. Professional help is just a phone call away.

SERVICES

Graphic Design— Contemporary appealing designs with surprisingly low prices. We Do ads, logos, brochures, packaging... more. Professional service. Top quality. Limited Budget. Design One (415) 763-2250. Free Consultation.

Save Money! Lazer cartridges recharged 1/2 price of a new cartridge Satisfaction guaranteed. Laser Cartridge Service. (408) 996-3776.

Advertise your product or service with a professional "Video Brochure". Low costs and dramatic results. HVI 294-8754.

Training—On-site Or Here!
Need to understand your computer better?
★ Software? ★ Hardware?
Learn from professional instructors!
TRAINING UNLIMITED
1376 32nd Ave.
San Francisco, CA 94122
(415) 753-1848

The Essence of Networking

is trust. It doesn't just happen; it has to be built. Every professional needs an expanding net of business and personal contacts. Only a few keystrokes away from where you are sitting right now is a place where serious networking happens day and night. That place is

The WELL

With your computer and modem dial **415/332-6106** and type **newuser** to register.
Or call **415/332-4335** for more information.

BUSINESS PLANS
Experts in developing tailored packages for your business loans. High approval rate. Market analysis, industry analysis, financial analysis-- specialists in each area. No client too small, no project too large. Long list of satisfied clients, your satisfaction guaranteed.
Bond & Associates
(415) 537-4191

Desktop Consulting
Hardware and Software Sales & Support
- Desktop Publishing
- Databases, Spreadsheets
- Telecommunications
- Programming, Conversions
- Office Automation

STREAMLINE CO.
(415) 434-2352

MicroTimes Classifieds can work for you!
Call (415) 652-3810

SERVICES

Alameda Words Words Words. Newsletters,resumes, proposals, reports, manuscripts. On the water at Mariner Square (415) 522-3355.

Contract Programmer— IBM PC, DOS, OS/2 C, Fortran, Basic, Pascal, Assembler... Free consultation! Call Jay at (415) 621-7924 after 6 pm.

Quality Word Processing —Resumes, books, plays, letters, graphics. Laser printing. Lessons taught on Pagemaker, Microsoft Word, MacDraft, Super Paint. Reasonable rates. Call: (415) 523-8184.

Rent-A-Writer's Professional Technical Writers — will come to your site or work independently to document all your hardware, software and temporary writing needs. Call (415) 841-8003.

Technician/Programmer/ Author/Photographer avail —for consultation in the Bay Area. Specialist in assisting overburdened Engineering Departments meet deadlines, generate & implement ECOs & review & correct documentation. Prototype & PCB fab mod & test; drafting, documentation & diagnostics. Send legal-sized S.A.S.E. & your Non-Disclosure Agreement for an evaluatory copy of consulting contract. Thipdar, P.O. Box 5519, Walnut Creek, CA 94596.

IBM Typewriter Repairs— guaranteed estimates— free. San Francisco and Peninsula (415) 359-2888 and (415) 879-0053.

User friendly manuals are easier than you think. User Documentation Service. Free estimates (415) 586-4577.

SERVICES

Technical Writer- Editor offers extensive experience in preparing technical and marketing publicatons. Hourly/fee. (408) 736-1135.

Analogue Consulting— Specializing in low cost analogue and digital designs. Strong patent experience. First hour free to discuss your project. Call Mike Berke at SIERRA PHYSICS, (408) 739-2406.

SOFTWARE

Fractal Images on IBM/ Clones Hercules card and math chip needed. Write: Phil. F., Box 26681, SF CA 94126.

Microsoft Word- Version 4.. Latest, Best, New: In sealed package. $100 or B.O. Dean (415) 524-9430.

CopyIIPC Board $60, Reflex $30, VP Planner $30, Smartcom2 $30, Enable $120, XT. Hard/ Floppy Controller $50, IBM Professional Editor $25, Turbo Pascal/ Tutor/ Graphics and Database Toolboxs $150, Quick Code 3+ $65, Dr. Halo 2 $20, 1Dir $10, Norton Utilities 3.1 $10, Utah Cobol $25, Desqview $50. Call Erin at (415) 949-3348.

IBM Word Perfect 4.2 $150.00 including Library. Never used. Eric H: (408) 985-7713, w: (408) 756-7088.

Desklink— Hook up two PC's (PS/2's) and share resources. Shrinkwrapped $75, George (415) 934-6287.

Automotive R&D Macro, IBM/ Lotus dose Bore/ Stroke, Compresson Ratio, Drive Train ++ 5 1/4's, $20 to Dr. White, Box 107, Fairfax, CA 94930.

CAD AND GRAPHICS USERS

High Resolution Printouts for a Dot Matrix Printer.

The Alps ImageEnhancer is a printer/graphics add-on board for IBM PC, XT, AT and 100% compatible.
- On-board memory and processor quickly free CPU
- Emulation for Houston Instruments DM/PL or Hewlett Packard HPGL plotter command languages enables high quality printer plots up to 360 X 360 dpi
- Supports black and white or color printers: 9 pin, 18 pin, 24 pin
- Call for list of printers supported

Call for sales, service and authorized VAR support for CAD and graphics hardware and software including:

Autodesk Products
Control Systems Graphics Cards
Calcomp Plotters, Digitizers, Thermal Printers
AST, ALR, Compaq, Everex, Wyse Computers
Low Cost Clone Computers
Alps, NEC Printers
QMS Laser Printers

ABLE MICRO-COMPUTER CENTRE

George Walker
GRAPHICS APPLICATIONS
678 Ralston Ave.
Belmont, CA 94002
(415) 593-2253

INDEPENDENT CONSULTANTS

We develop quality systems at reasonable rates. All types of programming available (specializing in dBase III). Call Joy for a free estimate.

☐ Custom Programming
☐ Hardware/Software Installation
☐ Training and Support

ACCELERATED INFORMATION, INC.
(415) 543-7998

WANTED

Laser printer or scanner, any cond, working or not. (408) 437-3052.

Grad student wants inexpensive or donation of IBM correcting Selectric II or III. If you have your system & don't need the typewriter pls. call 775-7017.

WANTED: Computer & electronic scrap. Precious metals in any form. For top prices & full details call: West Coast Metals Process, Inc. 1468 Zephyr Avenue, Hayward, CA 94544 (415)489-8141.

Ahead of everyone . . .

Crescent Com, Inc.

Introduces

CITIZEN *Mate/12*

Vega VGA $255

COMPUTERS

AST Model 80	$1550
AST Model 90	$2090
AST Model 120	$2400
AST Model 140	$2750
AST Model 170	$3175
AST 386	In Stock
IBM PS/2 Model 30 2 Dr	$1260
IBM PS/2 Model 30 20 MB	$1675
IBM PS/2 Model 50	$2450
IBM PS/2 Model 60, 40 MB	$3225
For models not listed, please call.	
Compaq Deskpro Model 1	$1695
Compaq Deskpro Model 20	$2325
Compaq Deskpro Model 40	$2975
Compaq Portables 386	Please Call
Citizen-Mate/12	Please Call
Samsung 286 1MB	$1050
ALR 386	Best Price
AMT All Models	Best Price
Mitac All Models	Call!
Crescent 286 6/12 Base	$995
Crescent 386	$1900
Crescent LCD Portable 286	$1990
Toshiba T1000	$745
Toshiba 3100/20	$3060
Toshiba 5100	$4950

PRINTERS

ALPS ALQ 224 Color	$475
Citizen 120D	$155
Citizen 180D	$173
Citizen MSP 40	$332
Citizen MSP 50	$370
Citizen MSP 55	$550
Panasonic 1091i	$210
Panasonic 1081i	$190
Star NX 1000	$185
Okidata All Models	Call!
NEC P2200	$350
Toshiba 321SL/351C	$515/950
HP Laser II w/toner	$1660
NEC All Models Available.	

CRYSTALPRINT SERIES II™
The Page Printer with a Personal Flair! $1399

- 100% HP LaserJet Series II Emulation
- Small, Compact Desktop Printer
- 50% Smaller and 30% Lighter than the Leading Laser Printer
- Compact Font and Emulation Cartridges
- Crisp, Clean and Professional Quality Printing.

Features & Benefits

Citizen Mate/12 Basic Model: $1379

- Keyboard switchable 12.5/6.25 MHz for full PC/AT compatibility.
- 1 MByte memory standard on the motherboard for increased performance.
- 2 serial, 1 parallel and 1 mouse port integrated on the motherboard for powerful communications capability.
- Floppy and hard drive controllers integrated on the motherboard with disk caching for quick data retrieval.
- MS DOS™ 3.3, GW BASIC,™ operating system and Set-up/Diagnostics for set-up and testing.

Citizen Mate/12 Basic Plus Model: $Call

- All features available on the Basic Model—PLUS:
- EGA Video Adapter integrated on the motherboard for emulation support of EEGA, EGA, CGA, MGA, Hercules,™ Plantronics ColorPlus.™

Citizen Mate/12 Deluxe Model: $Call

- All features available on the Basic Model—PLUS:
- EGA Video Adapter integrated on the motherboard for emulation support of EEGA, EGA, CGA, MGA, Hercules,™ Plantronics ColorPlus.™
- 40 MByte hard disk drive with an access time of 28ms for fast data retrieval.

EGA & VGA

ATI Wonder	$189
Orchid EGA	$310
Paradise Autoswitch 480	$185
Genoa Super Hi-Res	$199
Everex EGA	$120
Video 7 Vega Deluxe	$190
Paradise VGA Plus	$270
Video 7 Vega	$255
Genoa VGA 5200	$420
Quadram Ultra VGA	$275
ATI Vega	$290
Control Systems	Call!
EGA, VGA compatibles available.	

MONITORS

Samsung Mono	$85
Amdek 310/410	$135/160
Quimax	$135
Casper 14"	$120
NEC Multisync GS	$190
Crescent Hi-res 1028-768	$550
NEC Multisync II	$575
Sony CPD 1302	$615
Mitsubishi Diamond Scan	$500
Nanao Flexscan	$585
Taxan 770	$540
For monitors not listed, please call.	

SERVICE CONTRACTS AVAILABLE
CALL FOR PRODUCTS NOT LISTED
Prices reflect a cash discount
Free in-store installation of products.
Hours: M-F 9-6 • Sat 11-5
Ventura is a trademark of Xerox.
Prices subject to change without notice.

SOFTWARE

WordPerfect 5.0	$220
MS DOS 3.3 w/GW BASIC	$95
IBM DOS 3.3	$99
IBM OS/2	$350
Lotus 1-2-3	$270
Quattro	$115
MS Windows 286	$75
MS Windows 386	$135
Microsoft Word	$233
dBASE III +	$385
WordStar 2000 Plus	$337
Aldus PageMaker	$480
Xerox Ventura	$480
Lotus Enhancements	35% off

Excalibur Bravo only **$895**
High-performance accounting for small business without the high price. General accounting system and retail management system.

- Invoices
- A/P
- A/R
- Purchase orders
- GL
- Checks
- Inventory
- Payroll
- Free tech support for end user
- Free updates
- Please call for more info

HARD DRIVES, HARD DISKS, ETC.

Seagate ST 225 w/controller	$268
Seagate ST 251-1 28ms w/O	$445
Seagate ST 4096	$671
Miniscribe 6053/3053	$575/570
Micropolis 40 MB/71 MB	$545/650
Teac 1.2 floppy	$115
Fujitsu 360K	$89
Tape Backups	All Models Available
Hard Drives Above 100 MB	Please Call

MISCELLANEOUS

Microsoft Bus Mouse	$115
Microsoft Serial Mouse	$110
PC Mouse	$105
Logitech Hi-res Mouse	$95
Logitech Mouse	$75

NETWORK PRODUCTS
We Carry A Full Line Of Network Products, Terminal, Passive & Active Hubs, Cards & Fileservers To Satisfy Any Particular Application

SALES PERSON WANTED
Will Train If Needed. Good Compensation and Commission. Call ATA—(408) 738-2480

CRESCENT COM INC.
Where after sales service matters.

690 Market Street • Suite 515 • San Francisco, CA 94104
(415) 362-7120

3531 Ryder Street • Santa Clara, CA 95051
(408) 738-2480

214 Francisco Lane • Fremont, CA 94531
(415) 490-7967

Fax #
(408) 738-1973

ADVERTISERS INDEX

3F Associates 33
800 Software 25
ABC Computer 60,61
ACADemy, The 176
Access Computer 93
Advance 4,5
Advanced Micro Technology 162
Alpha Fine Computer Furniture 162
Americal 134
American Computer Systems .. 3
American Digital 133
Anthem Technology 48
Ark Technology 170
Aroma Co. 18
ATC 8
Authorized Technical Services 130
Autofax 18
Bay Area Computers 71
Belmont Computer Products . 16
Best PC Supply Inc. 181
BTC 65
CGI Technology 21
Cimpex 174
Common Cents Software 135
Compu Com Corporation 135
Computer Attic 7,143
Computer Discounts Club 136
Computer Furniture 72
Computer Showcase 131
Computer Spot 166
Computer Store 163
Computer Surplus Store 168,173
Computer Swap 140,156,178
Computers, Installation & Service (CIS) 79
Computown 37
Convex Resources 69
Crescent Com 187
Cypress Distributing 164,176,188
D-Data 147
Darcom Computer Products .. 83
Data One 159
Data Source 19
Data West 181
Dataquest 62
Diamond Software 27-29
Discount Computer Products 146
Discount Micro World 44,45
East-West Computer Shows 68,180
Eastern Enterprises 185
Edimax Computer Co. 36
EFI's Discount Computers ... 168
Empac 141
Evergreen Company 66
Friendly Software Store 117
Fry's 94-105
Fujitsu 139
Gates Distributing 51
Generic Computer Systems 182
Golden Gate Computer 155
Granite Computer Products . 182
Guenther Computer 20
Guitar Showcase 145
Halted Specialties 127
Haltek 189
Heath Zenith Computers & Electronics 175
Hellman's Marin Computer Center 91
Herb's Discount Software 32
High Technology 192
HT Electronics 180
ICB 12
Image Factory 181
IMC 39
IMSI 157
International Micronet Systems 41-43
J.M. Systems 88
Jemini Electronics 183
Jointek 179
Julian Systems 107
Kaypro 34,35
Kenfil Distribution 191
Klynas Engineering 176
Kyocera 75
Laser Tone 140
M.A.C. (Modern Accessories for Computers) 111
MAC Garden 92
Main Computers 161
Managing Technology 85
Maxbit Computer 38
Micro Distribution Center 138
Micro Strategies 153
Micro Systems Engineering ... 11
Micro-Tech International 47
Microcom Systems 58
Microstar Software Library ... 119
Microsystem Designs 16
MicroTimes Rebuttal 15
Millenium Communications 14
Millenium Press 40
Miracle Computer 123
Mitsuba 31
Monarch/Microsell 108
Network Associates 125
New Age 67
Nordic Computers 87
OEMI 9
PC Plus Consulting 13
PC Upgraders 165
Peripheral Land 113
Printer Works 129
QSP Inc. 73
Quality Distributing 81
Qume 17
Rosehill System 22,23
Royale Data Products, Inc. .. 154
Schwab Computer 38
Sci Tech Stores 120,121
Sefco Computer Products ... 158
Seybold Seminars 154
Softnet 21
Software City 55
Software For Less 158
Software House 49
Software Outlet 109
Songtech International 172
Storage Systems Engineering 30
Subscription Coupon 38
Summit Micro Designs 38
Supersoft 63
Tanstaafl 12
Task Technology 177
Tatung 14
Technoland 59
Tek Computer 57
The Waite Group 172
Today Computer 182
Tokyo Electroland 167
Toptek Micro Center 137
Transnet 171
Typesetting Shop, The 178
Universal Computer Products 151
USM Distributors 58
Videoscope 115
Winners Circle 149
Worldwide 2
Yes Computers 169
Z-Technology Systems 77
Zoltrix 181

Tell them you saw it in MICROTIMES!

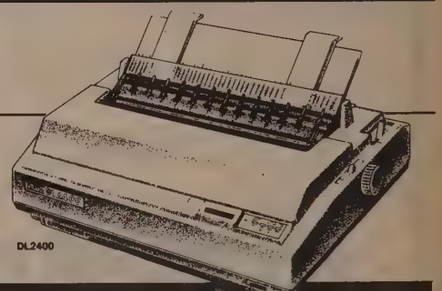
FUJITSU DL 2400 and DL 5600

DL 2400
- 216 cps draft - 72 cps LQ
- 24 wire dot matrix
- 16 character LCD panel
- Parallel and serial interface
- Quiet (53dBA)
- Single, double, triple-bin cut sheet feeders available
- Emulates IBM Graphics/Diablo 630 API
- Available in color

Call for price

DL 5600
- 24 wire dot matrix/24K buffer
- 486 cps draft - 162 cps LQ
- Handles 8 part forms/copies
- MTBF - 8000 power-on hours
- Emulates Diablo 630 API, IBM Graphics Printer and IBM Proprinter XL
- Serial and parallel interface
- Available in color
- 16 character LCD panel

Call for price



Cypress Distributing Company

(Outside CA) 1-800-344-3044

560 Lincoln Avenue
San Jose, CA 95126
(408) 297-9800

22186 Rim Pointe
El Toro, CA 92630
(714) 770-7244

2670 Truxel Road
Sacramento, CA 95833
(916) 646-1955

Datasouth 10 Net Century Data Systems Ampex
Personal Computer Products Panasonic Seikosha C. Itoh
Moniterm Star Micronics Mitsubishi Rutishauser Canon

N E W • U S E D • S U R P L U S

A COMPLETE ELECTRONICS SUPERMARKET!

NEC 20MB Hard Disk — **$149.00**

NEC 20MB Hard Disk Kit — **$199.00**
• ST-225 Compatible • Beige bezel • XT Controller w/cables • New

PC/XT Serial Card — **$17.95**
• Short Card • IBM Compatible*

Mitsubishi 1.2MB Floppy Diskette Drive — **$89.95**
• IBM Compatible* • One year warranty

AST Six Pack Plus — **$49.00**
• Serial, Parallel and Game Port • Real-time clock • 384KB capable

Seagate ST-4096 — **$689.00**
• 80MB Full height • 28ms w/ software

Quantum Q-540 — **$299.00**
• 40MB Full height • 40ms

"MAC" 32MB Hard Disk Drive — **$599.00**
• Hooks direct to Macintosh w/ software

512K RAM Bd. True IBM — **$99.00**
• AT Compatible • Uses 41128 piggy back RAMS

Optical Incremental Encoder — **$29.00**
• 1728 steps • P/Rev. • TTL or CMOS outputs 2" dia. x 2.25" • New! • w/Pin Out

Xebec 1410 Hard Disk Controller — **$39.00**
• SASIin • ST/506out

Haltek proudly announces we are an Intel Dealer! A full line of Computer Enhancement boards and Math co-processors. Call for competitive pricing.

Visit our 12,000 plus square foot retail store. We are a vast resource of I.C.s and passive components at unparalleled prices. A full line of PC compatible computers, peripherals, software and books. Over 120,000 square feet of backstock warehouse.

Terms: California residents add 7% sales and use tax. Prepaid orders sent freight C.O.D. MasterCard, Visa and American Express accepted.

Store hours Mon–Fri 7:30am to 7:00pm and Sat 9:00am to 5:00pm (PST).

*IBM is a registered trademark of International Business Machines

HALTEK
ELECTRONICS

1062 Linda Vista Ave., Mt. View, CA 94043 · 408-744-1333/415-969-0510

DVORAK'S LAST COLUMN

Great Issues of the 21st Century:

What DO Women Want In A Personal Computer? An Immodest Proposal Or A Computer For Bimbos?

Would Your Mother Buy This Concept?

By John C. Dvorak

Once in a while, a great letter comes along that needs public discussion. The following letter from A. Jesse Ivanhoe, a talented engineer from Venice, CA, exhibits these characteristics. I find his comments interesting and his idea worth a public discussion. My question to the readers: Are his ideas and observations realistic or simply sexist? Comments are welcome only if you personally predict what it would take to get more women interested in computers. — JCD

Dear Mr. Dvorak:
I particularly enjoyed your column in the May issue of *MicroTimes* saying farewell to the Mac and regretting the retreat of computers from non-business uses.

I've been feeling that way for a long time. In fact, I strongly believe that it's time for a clever computer manufacturer to go after the really big consumer market — the one that has been foolishly neglected for 10 years. Mitch Kapor, founder of Lotus software, understands this. On a recent TV interview he said that the next most successful genre of software would be what would make women want to use a computer. And the next important breakthrough in computers will also be what makes women want to use them.

Give women something meaningful to do with a computer and they'll buy computers by the tens of millions!

Studies show that women are extremely interested in self-improvement. They annually buy millions of self-help and how-to books, tapes and videos. But computers are much better than books, tapes or videos because a computer can interact and personally direct and measure a user's behavior. This is certainly much more desirable than the mere generalities of a self-help book. Self-help software can replace self-help books, tapes and videos — an immense potential.

The point is: If you want masses of women to use computers, give them a low-priced, simple, lap-top computer in designer colors and lots of self-help, how-to software, and call it the "total self-help computer way of life." Tens of millions of self-help computers and software would be sold.

The so-called Personal Computer may have been personal when Wozniak and Jobs invented it, but it rapidly became just an intelligent work station for business. Even Apple had to finally surrender and go full force into business usages, as you bemoan in your column. This failure to make the computer a popular home electronic item was caused by a total void of meaningful software for personal consumer use.

Women won't use those immense overly powerful, overly costly non-portable business oriented PCs. They will, however, go wild for a small, portable computer looking like a pocketbook that they can easily carry around, and that looks fashionable and makes them appear chic. And it must be low priced. And they must have available to them an abundance of self-help, how-to software.

The self-help computer can be low cost because it needs very little memory. Self-help software is fed in sequentially as the user progresses. The calculations to score the user's attitudes and behaviors are simple and are stored in small files on the disk. The crystal display need only be a few lines, since everything is done in words. The concepts conveyed back and forth verbally are what is essential, not wild or fancy graphics.

The components are widely available so that any clever company presently producing computers or software is in an ideal position to break open and dominate this vast new field. It just needs to grab the ball and run with it!

So far as producing the self-help software: Using my background in the behavioral sciences, I have developed an expert AI method for creating interactive self-help software. I could train a cadre of behavioral scientists (on a small advance plus royalty basis) in my methods and have 20 self-help programs available by the time the "self-help computer" has been designed, produced and is ready for sale. Then go on to create dozens of new self-help software each year. (There are hundreds of past and present self-help and how-to books, whose ideas are public domain, which could be the cores for an endless array of software.)

The marketing of the "feminine computer," with a batch of self-help software, would be through book retailers to go full force after the millions of self-help book, tape and video purchasers, all currently buying millions. After market acceptance, go hard into the electronic stores to make computers the consumer electronic item that they should be. Later on, a self-help computer designed for men could be offered plus software oriented towards both genders, also for self-education and entertainment.

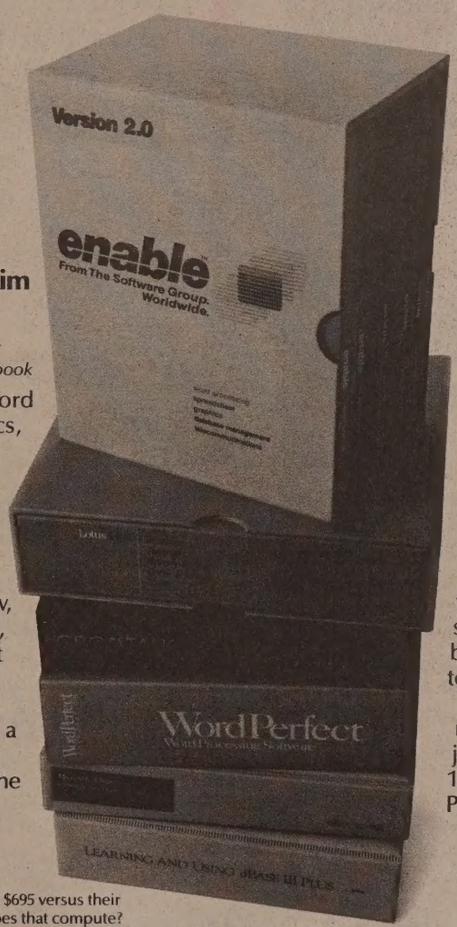
Instead of spending the future endlessly cloning IBM's new products, a clever company has the opportunity to make an end-run into the consumer computer market that can be far bigger than all the PCs sold in the past 10 years.

I'm writing you all this because you've been around for a long time and have all sorts of industry contacts. I've written a number of companies, large and small, about these ideas, to no avail. You probably know a company that might find my ideas interesting. Please connect me with them and earn yourself an agent's commission.

Sincerely yours,
A. Jesse Ivanhoe, B.E.E., M.S.

Any gals out there wish to comment? Any venture capitalists wish to invest? Write me c/o MicroTimes. *— JCD*

Enable 2.0 can do more for your business than the other five combined.



"Enable may legitimately claim to be the only package you'll ever need."

Computer Buyer's Guide & Handbook

Five major business tools, Word Processing, Spreadsheet, Graphics, Database Management and Telecommunications: all in one full-featured, easy to learn, cost-effective package. With the ability to share data across applications that no group of stand-alones can match. And now, with newly-enhanced version 2.0, *PC Week* has named Enable "best integrated software package on the market."

Its remarkable ability to handle a virtually unlimited range of tasks has already made Enable one of the leading software suppliers to the Federal Government and Corporations large and small.

"If you are looking for one program to do it all, this is the one."

PC Magazine

If you're stepping up to a Local Area Network, new Enable/LAN just came out on top in a comparison with other integrated LANs in an *InfoWorld* report: "easier to learn and use . . . the best integration . . . (Enable) simply feels right."

Enable 2.0 and Enable/LAN. Everything you need to unify, simplify and strengthen the operation of your business. For now, and for the growth to come.

For more information, plus the name of your nearest Enable dealer, just dial 1-800-634-3470. New York: 1-800-551-1004. Canada: 1-800-267-9967. Please ask for Department M.

Consider Enable's $695 versus their nearly $2500. How does that compute?

enable
integration without compromise

©1987 The Software Group, Dept. M, Northway Ten Executive Park, Ballston Lake N.Y. 12019

Available from these authorized Kenfil dealers:

800 Software
918 Parker St.
Berkeley, CA 94710
(415) 644-3611

Discount Micro World
68 Paul Drive #C
San Rafael, CA 94903
(415) 492-8890

Technoland
2960 Gordon Ave.
Santa Clara, CA 95050
(408) 732-2244

Diamond Software
7916 Capwell Dr.
Oakland, CA 94621
(415) 633-2588

Kaleen's
1925 Francisco Blvd.
San Rafael, CA 94901
(415) 459-3683

Fischer/Howard
654 Bair Island Rd.
#302
Redwood City, CA 94063
(415) 361-8801

Computer Biz
1290 Tully Rd.
Bldg #7 Suite #701
San Jose, CA 95122
(408) 280-1201

Western Computer Group
858 Burlway Rd.
Burlingame, CA 94010
(415) 340-1781

CITIZEN'S HOT NEW COMPUTER

For a limited time

Get Free EGA ($150 value*) and special system discounts as we celebrate the introduction of Citizen's new Mate/12 Computer!

You've waited long enough. THIS IS THE ONE. Citizen's new Mate/12 Computer is packed with features and is priced from just $2149 suggested retail.

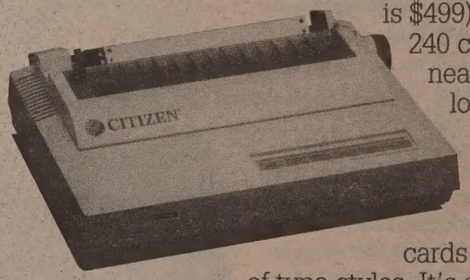
The Mate/12 is a high performance PC that's IBM AT compatible. It comes equipped with 1 MByte RAM and operates at 12.5 MHz (80286 microprocessor). You get MS-DOS Operating system, GW Basic, and Setup/Diagnostic Utilities software.

The motherboard has integrated peripheral controllers, serial and parallel ports, mouse port, and floppy and hard disk controllers. Plus, for a limited time you get EGA free! And the Mate/12 has a full 12 month warranty on parts and labor.

Supplies Limited

Unfortunately, we expect supplies of the new Mate/12 will fall short of demand. Get yours today AND take advantage of our introductory specials.

Right now selected dealers are offering terrific discounts on Citizen MSP and Tribute printers when you buy a Mate/12 computer. The MSP-40 Printer pictured here is a good choice to go along with your new Mate/12 and is specially priced now at participating dealers (suggested retail is $499). The MSP-40 is fast–240 cps draft and 48 cps near-letter-quality. Paper loading is automatic and motor assisted; push or pull tractor, top or bottom paper feed. Optional font cards allow a wide variety of type styles. It's also IBM Proprinter or Epson compatible for wide software versatility.



See the new Citizen Mate/12 Computer today at the following High Technology dealers:

*Free EGA offer ends July 31, 1988

Berkeley
HEX COMPUTERS
2435 Durant Avenue
(415) 644-1374

San Francisco
ADVANCE COMPUTER SYSTEMS
1231 Market Street
(415) 552-2902

A.T.C.
1504 Franklin Street
(415) 776-1520

Sunnyvale
ADVANCE COMPUTER SYSTEMS
665 Grape Ave.
(408) 732-6200

Walnut Creek
ADVANCE COMPUTER SYSTEMS
1987 North Main Street
(415) 945-8011

DEALERS: For Information On How You Can Become An Authorized High Technology Reseller, Contact Us At (818) 994-8001.

CITIZEN
HIGH TECHNOLOGY DISTRIBUTING COMPANY, INC.

Citizen, the Citizen logo, Citizen Mate/12 and Tribute are trademarks of Citizen Watch Co., Ltd. IBM and AT are registered trademarks of International Business Machines Corp.